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ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
THE MEDICAL AND SURGICAL ASSOCIATION
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FOR TABLE OF CONTENTS—SEE ADVERTISING SECTION PAGE 1

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INDEX
TO
VOLUME XVIII - 1934
Southwestern Medicine

Arranged Alphabetically by Title of Article
Editorial, News and Correspondence Sections by Months

ALLERGY IN MODERN MEDICINE, THE PLACE OF 5
L. O. Dutton, M. D., El Paso, Texas.
ALLERGY IN RELATION TO THE UROGENITAL TRACT 9
David M. Davis, M. D., Phoenix, Arizona.
THE ALLERGY SYMPOSIUM 109
Orville Harry Brown, M. D., Phoenix, Arizona.
FOOD ALLERGY (A Resume of the Literature; Personal Observations) 168
Orville Harry Brown, M. D., Phoenix, Arizona.
FOOD ALLERGY (Continued) 206
Orville H. Brown, M. D., Phoenix, Arizona.
DISCUSSION OF DR. BROWN'S PAPER ON "FOOD ALLERGY" 263
Drs. Werley, Dutton, Miller, et al.
ALLERGIC REACTION—AN IMPORTANT CAUSE OF ABDOMINAL PAIN 376
F. D. Garrett, M. D., El Paso, Texas.
APPENDICITIS 397
Charles W. Mayo, M. D., Rochester, Minnesota
ARIZONA STATE MEDICAL ASSOCIATION MEETING—MINUTES OF 43rd ANNUAL 267
Prescott, July 7, 8, 9, 1934
ARIZONA STATE MEDICAL ASSOCIATION PROCEEDINGS (Continued) 309
Reports of Committes and Officers.

BASIC SCIENCE IN ARIZONA 28
SOME PRACTICAL ASPECTS OF BRAIN TUMOR DIAGNOSIS 115
Leo Stone, M. D., Topeka, Kansas.
BRAIN INJURIES 160
Grayson E. Tarkington, M. D., F.A.C.P., Albuquerque, N. M.

A CASE FOR DIAGNOSIS 99
Discussions by Drs. L. B. Baldwin, R. J. Stroud and Orville H. Brown, Phoenix, Arizona.
CELIAC DISEASE (TWO CASE REPORTS) 302
B. P. Storts, M. D., Tucson, Arizona.
CITY-COUNTY HOSPITAL (El Paso, Texas) 271
Staff Meeting, March, 1934.
CLINICAL INDICATIONS FOR BLOOD TRANSFUSIONS 157
J. D. Hamer, M. D., Phoenix, Arizona.
COCCIDIOIDAL GRANULOMA (REPORT OF A FATAL CASE) 305
Leslie M. Smith, M. D., and W. W. Waite, M. D., El Paso, Texas.
THE COMMON COLD 63
Carl H. Geilenthien, B.Sc., M.D., Valmora, New Mexico.
COMMON SENSE ABOUT MEDICAL ETHICS 359
M. I. Leff, M. D., Glendale, Arizona.
CONSIDERACIONES SOBRE EL TRATAMIENTO QUIRURGICO DE LAS AFECCIONES INFLAMATORIAS DE LAS BILIARES 319
Dr. Ignacio Chavez, Guadalajara, Mexico.
CONCERNING THE SURGICAL TREATMENT OF INFLAMMATORY LESIONS OF THE BILIARY TRACT 327
Translation by the Editor.
THE CRIPPLED HAND 77
Curt Von Wedel, M. D., Oklahoma City, Okla.

DERMATOLOGICAL CLINIC 98
Leslie M. Smith, M. D., El Paso, Texas.

FRACTURES (Especially of the Long Bones) 333
Frank T. Hogeland, M.D., F.A.C.S., Cananea, Sonora, Mexico.
FRATERNAL GREETINGS 247
S. P. Vineyard, M. D., Amarillo, Texas.
FUNCTIONAL EVALUATION OF PERMANENT PARTIAL DISABILITIES 235
R. F. Palmer, M. D., Phoenix, Arizona.

HAY-FEVER IN CENTRAL ARIZONA AND ITS TREATMENT WITH ORAL EXTRACTS 130
E. A. Gatterdam, M. D., Phoenix, Arizona.
SOME HAY-FEVER PROBLEMS IN THE SOUTHWEST 46
Redford A. Wilson, M.D., Tucson, Arizona.
THE HEART IN THYROID DISEASE 194
G. Werley, M. D., El Psao, Texas.
HOW OUR EXPERIENCE IN THE LAST FEW YEARS HAS CHANGED OUR ATTITUDE TOWARD COLLAPSE THERAPY 93
J. J. Beatty, M. D., Clinical Director, Veterans' Administration Facility, Tucson, Arizona.
HYPOTHYROIDISM 198
S. C. Davis, M. D., Tucson, Arizona.

INDICATIONS FOR SURGERY IN THE TREATMENT OF DISEASE OF THE THYROID ... 187
Hal W. Rice, M. D., Morenci, Arizona.
INDUSTRIAL ACCIDENT NEUROSES: SUGGESTIONS FOR APPRAISAL AND TREATMENT ... 403
L. Cody Marsh, M. D., Tucson, Arizona.
INTESTINAL AMEBIASIS ... 133
Frank J. Milloy, M. D., Phoenix, Arizona.
INTRAPLEURAL PNEUMOLYSIS, AN AID IN RESTORING FUNCTION TO THE TUBERCULOUS LUNG ... 201
Victor Randolph, M. D., Phoenix, Arizona

MALPRESENTATIONS AND THEIR MANAGEMENT ... 137
Dudley Fournier, M. D., Phoenix, Arizona.
MAN WHO SWALLOWS FOREIGN BODIES—CASE REPORT ... 266
Elliott C. Prentiss, M. D., and W. W. Waite, M. D., El Paso ,Texas.
MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST ... 21
Nineteenth Annual Meeting, El Paso, Dec. 7-9, 1933.
MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST ... 418
Proceedings of the 21st Annual Meeting, El Paso, November 22-24, 1934.
MENTAL MECHANISMS ... 164
Cullen Ward Irish, M. D., Los Angeles, California
METHODS OF ALLERGIC STUDY ... 43
Charles S. Kibler, M.D., F.A.C.P., Tucson, Arizona.
MORE DONT'S ... 175
W. R. Jamieson, M. D., El Paso, Texas.

THE NEW MEXICO MEDICAL SOCIETY (Report of 52nd Annual Meeting) ... 307
Las Vegas, July 19-21, 1934.
NEW MEXICO MEDICAL SOCIETY, REPORT OF FIFTY-SECOND ANNUAL MEETING ... 346
Las Vegas, July 19-21, 1934.

OCULAR SYMPTOMATOLOGY IN GENERAL DISEASES ... 239
Stephen A. Schuster, M. D., and Frank P. Schuster, M. D., El Paso, Texas.

PATHOLOGY OF PULMONARY TUBERCULOSIS, ITS RELATION TO CLINICAL MANIFESTATIONS ... 290
F. T. Fahlen, M. D., F.A.C.P., Phoenix, Arizona.
THE PHYSIOLOGY AND PATHOLOGY OF THE THYROID ... 57
John W. Huffman, M.S., M.D., Tucson, Arizona.
ACUTE POLIOMYELITIS ... 299
Albert S. Lathrop, M. D., Santa Fe, New Mexico.
POSTPARTUM HEMORRHAGE ... 297
R. K. Smith, M. D., F.A.C.S., Tucson, Arizona
ADDRESS OF PRESIDENT ... 185
Forty-third Annual Session Arizona State Medical Association and Ladies' Auxiliary.
PRESIDENT'S ADDRESS—Women's Auxiliary to the Arizona State Medical Association ... 212
Mrs. C. R. Swackhamer, Superior, Arizona.
PRESIDENT'S ADDRESS, NEW MEXICO MEDICAL SOCIETY MEETING ... 253
Charles F. Milligan, M.D., Clayton, New Mexico.
PRE-OPERATIVE PREPARATION AND POST-OPERATIVE CARE ... 287
E. C. Moore, M. D., Los Angeles, Cal.
PROCTOSCOPY AS AN AID TO DIAGNOSIS ... 294
W. R. Hewitt, M. D., Tucson, Arizona.
PROBLEMS OF THE CLAIMS DEPARTMENT OF THE INDUSTRIAL COMMISSION ... 370
C. Leo Guynn, Arizona Industrial Commission, Phoenix, Arizona.
PUBLIC HEALTH NOTES ... 20
J. Rosslyn Earp, Dr. P. H., New Mexico Bureau of Public Health.
PUBLIC HEALTH NOTES ... 71
J. Rosslyn Earp, Dr. P.H., Director New Mexico State Bureau of Public Health.
PUBLIC HEALTH NOTES ... 97
J. Rosslyn Earp, Dr. P. H., Director, New Mexico State Bureau of Public Health.
PUBLIC HEALTH NOTES ... 138
J. Rosslyn Earp, Dr. P. H., Director N. M. State Bureau of Public Health.
PUBLIC HEALTH NOTES ... 174
J. Rosslyn Earp, Dr. P. H., Director New Mexico State Bureau of Public Health.
PUBLIC HEALTH NOTES—NEW MEXICO SURVEY ... 211
J. Rosslyn Earp, Dr. P. H., Director New Mexico State Bureau of Public Health.
PUBLIC HEALTH NOTES ... 247
J. Rosslyn Earp, Dr. P. H., Santa Fe, New Mexico.
PUBLIC HEALTH NOTES ... 265
J. Roslyn Earp, Dr. P. H., Santa Fe, New Mexico.
PUBLIC HEALTH NOTES ... 306
J. Rosslyn Earp, Dr. P. H., Santa Fe, New Mexico.
PUBLIC HEALTH NOTES ... 349
J. Rosslyn Earp, Dr. P. H., Santa Fe, New Mexico.
PUBLIC HEALTH NOTES ... 381
J. Rosslyn Earp, Dr. P. H., Santa Fe, New Mexico.
PUBLIC HEALTH NOTES ... 417
J. Rosslyn Earp, Dr. P. H., Santa Fe, New Mexico.
"PUFFING AS A FINE ART" ... 130
Carl H. Gellenthein, M. D., Valmora, New Mexico.
PULMONARY SYPHILIS: REPORT OF CASE ... 379
R. B. Homan, M. D., El Paso, Texas.
PULSION DIVERTICULUM OF THE ESOPHAGUS ... 227
Charles T. Sturgeon, M. D., Los Angeles, California.

RAGWEEDS AS SPRING POLLINATORS ... 173
E. A. Gatterdam, M. D., Phoenix, Arizona.
REACTIONS IN BLOOD TRANSFUSIONS ... 52
J. B. Littlefield, M.D., Tucson, Arizona.
RECENT ADVANCES IN THERAPY OF MALIGNANT NEOPLASMS OF HEAD AND NECK ... 1
M. Reese Guttman, M. D., Chicago, Ill.
RURAL OBSTETRICS—DELIVERIES IN THE HOME ... 238
GEORGE T. COLVARD, M. D., Deming, New Mexico.

SECTIONAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS—Arizona, New Mexico, Western Texas, Phoenix, Arizona, March 16 and 17, 1934 141
SIGNIFICANCE OF THE BLOOD PICTURE IN ACUTE SURGICAL INFECTIONS 415
A. E. Winsett, M. D., Amarillo, Texas.
SMALLPOX 17
I. J. Bush, M. D., El Paso, Texas.
SPECIAL PHASES OF MEDICAL ECONOMICS 391
Holman Taylor, M. D., Fort Worth, Texas.
SURGERY IN EUROPE, IMPRESSIONS OF 12
J. Leighton Green, Jr., M. D., El Paso, Texas.
SURGERY IN TUBERCULOSIS OF THE THYROID 62
Martin B. Tinker, M.D., F.A.C.S., Ithaca, New York.
SURGERY OF THE BILIARY TRACT 229
Howard K. Gray, M. D., Mayo Clinic, Rochester, Minnesota.

TEMPERATURE IN VACCINE THERAPY AND BIOLOGICALS 256
E. D. Strong, M. D., El Paso, Texas.
TETANY FROM HYSTERICAL HYPERPNEA 331
T. Gordon Reynolds, M.D., Esperanza, Sonora, Mexico.
DOES TONSILLECTOMY LIGHT UP LATENT TUBERCULOSIS? 84
E. W. Phillips, M. D., Phoenix, Arizona.
TRANSURETHRAL PROSTATIC RESECTION—REPORT OF FIFTY CASES 151
David M. Davis, M. D., Phoenix, Arizona
TRANSURETHRAL PROSTATIC RESECTION 411
Harry Wear, M. D., Denver, Colorado.
TRAUMATIC NEUROSIS 154
R. F. Palmer, M. D., Phoenix, Arizona.
TRAINING MIDWIVES 303
Gerritt Heusinkveld, M. D., Denver, Colorado.
TREATMENT OF ACUTE INTESTINAL OBSTRUCTION 224
W. O. Sweek, M. D., and Guy C. French, M. D., Phoenix, Arizona.
TREATMENT OF INFLAMMATIONS BY X-RAY 336
W. Warner Watkins, M.D., F.A.C.P., Phoenix, Arizona.
IS OUR PRESIDENT-DAY KNOWLEDGE ADEQUATE FOR THE CONTROL OF CLINICAL TUBERCULOSIS? 81
O. E. Egbert, M. D., El Paso, Texas.
THE TREATMENT OF TUBERCULOUS PULMONARY CAVITY 88
Charles W. Mills, M. D., Tucson, Arizona.
CHILDHOOD TUBERCULOSIS, DISCUSSED WITH SPECIAL REFERENCES TO PREVENTIVE MEASURES 120
Meldrum Keplinger Wylder, M. D., F.A.C.P., Albuquerque, N.M.
CHILDHOOD TUBERCULOSIS, ETIOLOGY AND DIAGNOSIS 123
Charles V. Barley, M. D., Tucson, Arizona.
CHILDHOOD TUBERCULOSIS AS A PUBLIC HEALTH PROBLEM 128
J. Rosslyn Earp, M.A., M.R.C.S., L.R.C.P., Dr. P.H., Santa Fe, N.M.
COLLAPSE THERAPY IN PULMONARY TUBERCULOSIS 259
C. A. Thomas, M. D.; S. C. Davis, M. D.; R. A. Wilson, M. D., Tucson, Arizona.
TUBERCULOSIS AS SEEN IN THE POSTMORTEM EXAMINATION OF CHILDREN 408
Willis W. Waite, M. D., El Paso, Texas.

WHAT TO EXPECT FROM SURGERY IN TREATMENT OF EXOPHTHALMIC GOITER 219
W. L. Brown, M. D., C. P. Brown, M. D., and J. L. Murphy, M.D., El Paso, Texas.

X-RAY AND RADIUM TREATMENT OF HYPERTHYROIDISM 191
John W. Carthcart, M. D.

EDITORIAL FOR JANUARY

A HAPPY NEW YEAR 30
THE SOUTHWESTERN ASSOCIATION 30
SAMUEL M. PARRISH 31
SANTA CRUZ MEDICAL SOCIETY (Arizona) 31
EL PASO COUNTY MEDICAL SOCIETY 32
AUTO ACCIDENTS AND ALCOHOL 32
SLEEPING SICKNESS 33
ARIZONA AND NEW MEXICO IN THE LEAD 33
SOUTHWESTERN SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS 34
THE NEW FOOD AND DRUGS BILL 34
REVIEWS AND NOTES 40

EDITORIAL FOR FEBRUARY

COMING MEETINGS 72
PROGRAM SOUTHWESTERN DISTRICT CONFERENCE OF AMERICAN COLLEGE OF SURGEONS 72
WOMEN'S AUXILIARY TO THE ARIZONA STATE MEDICAL ASSOCIATION 75

EDITORIAL FOR MARCH

THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST 102
THE ANNUAL NEW MEXICO MEETING 102
THE ARIZONA STATE ASSOCIATION MEETING 102
THE SOUTHWEST 103
SUGGESTED RELIEF FOR PROFESSIONAL MEN 103
DON'TS 103
EL PASO COUNTY MEDICAL SOCIETY 105

EDITORIAL FOR APRIL

ARIZONA STATE MEDICAL ASSOCIATION, Forty-Second Annual Session, Prescott, June 7, 8 and 9 142
WOMAN'S AUXILIARY, ARIZONA STATE MEDICAL ASSOCIATION 143
E. MEAD JOHNSON 143
CHARLES L. HATHAWAY 144
THE EL PASO COUNTY MEDICAL SOCIETY 144
BOOK REVIEWS 148
AMERICAN MEDICAL GOLFERS PLAY IN CLEVELAND, JUNE 11th 149

EDITORIAL FOR MAY

NOTICE REGARDING ARIZONA MEETING 176
PROGRAM—ARIZONA STATE MEDICAL ASSOCIATION, PRESCOTT, ARIZONA, JUNE 7, 8 and 9 176
PRINCE ALBERT MELICK (Williams, Arizona) 178
WILLIAM CLARENCE MATTHEWS (Roswell, N.M.) 178
ALBERT JOHN HOSKINS (Albuquerque, N. M.) 178
CANCER CONTROL 178
NEW JOURNAL FOR DIGESTIVE DISEASES 178
THE WOMAN'S AUXILIARY TO THE ARIZONA STATE MEDICAL ASSOCIATION 179
BOOK REVIEWS 180
ARIZONA PUBLIC HEALTH ASSOCIATION PROGRAM 181

EDITORIAL FOR JUNE

PROGRAM—Fifty-second Annual Session, New Mexico Medical Society 214
CORRECTIONS on "Childhood Tuberculosis as a Public Health Problem in April issue 215
THE AMERICAN COLLEGE OF PHYSICIANS 217

EDITORIAL FOR JULY

DANIEL HURST CARNS 248
BOOK REVIEWS 250

EDITORIAL FOR AUGUST

HIGHER OBSTETRIC STANDARDS FOR ARIZONA 280
BOOK REVIEWS 283
NOTES ON MEDICINES 279

EDITORIAL FOR SEPTEMBER

THE COMING SOUTHWESTERN MEETING, November 22-24 312
WATCH FOR THE OCTOBER JOURNAL 312
THE INDUSTRIAL RELATIONS COMMITTEE, ARIZONA STATE MEDICAL ASSOCIATION 312
GOVERNOR MOEUR WILL CONTINUE 313
WHAT'S WRONG WITH THE CHESTERFIELD AD? 313
THE NATUROPATHIC REFERENDUM 313
THE WEST WELCOMES WARNSHUIS 314
NEWS ITEMS OF MARICOPA COUNTY, ARIZONA 318

EDITORIAL FOR OCTOBER

MEDICAL AND SURGICAL ASSOCIATION COMES OF AGE 350
THE SOUTHWESTERN PROGRAM 351
CONSTITUTION OF THE ASSOCIATION 351
PROGRAM, TWENTY-FIRST ANNUAL MEETING, MED. AND SURG. ASSN. OF THE SOUTHWEST 352
WOMAN'S AUXILIARY, ARIZONA STATE MEDICAL ASSN. 355
RESOLUTION ON MEDICAL ECONOMICS 357
APPLICATION BLANK, SOUTHWESTERN ASSOCIATION 358

EDITORIAL FOR NOVEMBER

PRESIDENT ROOSEVELT'S COMMITTEE ON ECONOMIC SECURITY 382
CECIL CLAIR DAVIS, (Albuquerque) 383
SOME ETHICAL MEDICAL ADVERTISING 383
EL PASO COUNTY MEDICAL SOCIETY NOTES 383
ARIZONA STATE MEDICAL ASSOCIATION, REPORT—(Continued from September) 384
Book Reviews 389

EDITORIAL FOR DECEMBER

STATE OF ARIZONA 1s. LUKAN-TROTZKY 424
MEDICAL EDUCATION OF THE LAITY 426
PROPOSED CONSTITUTION—SOUTHWESTERN MEDICAL ASSOCIATION 428
INDUSTRIAL RELATIONS COMMITTEE, ARIZONA STATE MEDICAL ASSOCIATION 431
BOOK REVIEWS 434

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RECENT ADVANCES IN THE THERAPY OF MALIGNANT NEOPLASMS OF THE HEAD AND NECK.

M. REESE GUTTMAN, M. D.
Chicago, Ill.

(Read before the New Mexico Medical Society at its Fifty-first Annual Meeting, held at Roswell, N. M., May 18-20, 1933.)

The treatment of malignant growths in any portion of the human economy is an unenviable undertaking at best. Even with the best methods at our command today, the probabilities of ultimate success and cure of the patient leave a great deal to be desired. Yet it must be understood that by no means are our efforts always lacking in success. The lack of success is, of course, the prime reason for the multitudinous methods and means employed today and the cause for the tremendous amount of effort expended in the study of malignant disease.

This large amount of research that in most instances has been a matter of "love's labor lost," has led within the past decade to several important advances that may enable us to treat this melancholy problem with a slightly greater degree of confidence. The more important contributions, that have practicable application in daily practice, have been in the realm of coordination of the histologic appearance of the lesion to its probable biologic course and response to surgery and irradiation, as well as revolutionary changes in the technic of utilization of gamma irradiation by x-ray and radium.

The objective microscopic anatomy of neoplastic growths since the monumental work of Martzloff, Broders, Quick and Cutler, Regaud and Schmincke, has enabled us to prognosticate, with some degree of confidence, the probable clinical course that a neoplasm will pursue, and also enables us more certainly to apply the most appropriate form of therapy that is indicated.

It is a matter of common knowledge, especially to those colleagues who have a major interest in the management of malignant disease, that not all carcinomata about the head and neck pursue an identical clinical course. Most of the tumors grow slowly, tend to remain localized for a long period of time, and metastasize late in the course of the disease. Experience has also shown that the slow-growing types of malignancies are not unduly stimulated to growth and extension by trauma. On the other hand, tumors have been observed—and this is essentially true of those located in the tonsil, base of the tongue, and pharynx—to progress rapidly, metastasize early, and cause death in a very short period of time. It has been noted that trauma, even though minimal in amount, has caused marked progression and diffuse rapid extension in these types of cases. Even though the primary lesion may be small and in some instances no larger than the head of a match, the associated involvement of the cervical glands may be very extensive and invade both sides of the neck. Not rarely the primary growth may be microscopic in size in spite of the tremendous cervical glandular affection, and located only after a carefully performed autopsy. Broders was able to show graphically that slow-growing, late-metastasizing growths were highly differentiated in character, showing squamous characteristics—the cells tending toward elongated pavement structure, with marked tendencies towards keratinization and formation of epethelial pearls, intercellular bridging, and infrequent exhibition of mitotic figures. On

the other hand, the carcinomata that exhibited clinically a high grade of malignancy were of the atypical anaplastic embryonal tumors, showing a diffuse cellular growth, unusually large numbers of mitotic nuclei, and a conspicuous lack of adult features such as keratinization, intercellular bridging, and pearl formations. Broders was able to grade their probable malignancy into four degrees, depending upon the histologic picture and the relative percentage of mitotic figures exhibited.

Quick and Cutler, some time later, showed that these highly malignant anaplastic neoplasms were highly radiosensitive and responded to relatively small doses of irradiation, and that the adult fully differentiated neoplasm required exceptionally large doses of irradiation in order to effect regression.

Martin and Quimby studied the actual amounts of irradiation required to cause these growths to regress and found that the highly malignant anaplastic growths required but three to five S.E.D. distributed throughout the lesion, while adult squamous-cell carcinomata required ten to twelve, and even more, S.E.D., to effect their destruction. The radiosensitive and yet highly malignant neoplasms that pursue such a rapid course show two distinct types when studied histologically. One of these forms is the so-called lympho-epithelioma described by Regaud and Schmincke. Histologically they represent a picture of sheets and cords of diffusely growing epithelial cells. The cells themselves are rather large, pale staining, with a delicate cell membrane that may be difficult to distinguish at times and so give the impression of a cell syncytium. The nuclei are large, vary markedly, in size and have a prominent nucleolus. The characteristic feature is an infiltration of lymphocytes in various portions of the section. At times the lymphocytic infiltration may be so marked as to obscure the true underlying neoplastic cells. The exact histogenesis of this neoplasm is not known, but it has been assumed to be due to a neoplastic transformation of a so-called lymphepithelium. This term is applied to epithelial tissue in which a sort of symbiotic relationship is found to lymphoid tissue. This is, of course, most common in the nasopharynx, tonsil, and base of the tongue.

The second type is the so-called transitional cell carcinoma, described by Ewing, Quick, and Cutler. Microscopically the growth is found to be composed of diffuse cords and sheets of small round or polyhedral cells, containing large hyperchromatic nuclei that occupy almost the entire cell and show many mitotic figures. The cells vary in size and staining qualities and the growth is so anaplastic and cellular that epithelial characteristics are lost and difficulty is encountered in distinguishing them from small round-cell or lympho-sarcoma.

A review of the histologic features of over two hundred of our malignancies about the head and neck shows that the incidence of lympho-epithelioma was 5.5 per cent and that of the transitional-cell carcinoma was 17 per cent. Similar statistics have been found by other workers. The practical significance is obvious: 22.5 per cent, or about one case in four, is of the highly malignant anaplastic variety, that causes death very rapidly, that has wide, diffuse metastases throughout the body before the primary lesion has markedly increased in size, that is stimulated to rapid progression and extension by even slight trauma, and that is highly radiosensitive, being easily influenced by even small doses of irradiation. Since diffusion may have occurred before the growth has reached an appreciable size, and since surgical trauma may aid in dissemination, it is apparent that surgery is contraindicated in these neoplasms. Our experience has repeatedly substantiated the validity of this conclusion. In the past two years we have never operated upon a lympho-epithelioma or transitional-cell carcinoma. Due to their high degree of radiosensitivity and the lack of response to surgery, we employ irradiation exclusively in the treatment of these neoplasms. However, in spite of the ease with which a primary growth may disappear under adequate irradiation, death not infrequently results, due to the fact that diffusion has already occurred to the parenchymatous organs and the retroperitoneal lymphnodes, by the time the patient has sought medical advice. The prognosis is therefore poor under most circumstances.

The use of irradiation therapy for malignant neoplasms is so well known that it requires no comment. However, there have been two significant and revolutionary changes in gamma-

ray technic that may have a decidedly important bearing upon the results to be obtained by this means of therapy. They are Coutard's method of fractional dosage of x-ray therapy and the use of telio-radium therapy, or the so-called four-gram radium bomb used at a distance.

The philosophy of the Coutard method of deep x-ray therapy is based upon the observation that the radiosensitivity of epithelial neoplasms is about the same as that of the germinal cells of the epithelium from which they arise, and also that cancer cells are most vulnerable to the gamma ray during the period of mitosis. It has been found that cancer cells undergo mitosis about every five days. It can thus be seen that decided advantages may be had by giving a sufficient dose of irradiation to affect the germinal layer of the epithelium about the tumor bed and that it would be best to distribute this dose over a period of more than five days in order to be sure to affect all cells undergoing mitosis.

This dose, the so-called epidermicidal dose, causes certain signs of a radio-inflammation to appear, and their appearance is utilized as a biologic indication that an adequate amount of irradiation has been effected. The signs of radio-inflammation appear on the skin, the so-called radiodermatitis, and on the mucosa of the air and food passages as well, the so-called radio-epithelitis. It was found that a dose of 4500 to 5000 R, distributed over a period of ten days in two daily sittings of one hour each for a total of twenty hours, would cause the appearance of the cutaneous and mucosal lesions about to be described.

The physical constants by which the dose was administered were as follows:

Focal distance	Fifty centimeters.
Field	Fifty square centimeters.
Filter	2 mm. zinc.
Amperage	5
Voltage	175 kilovolts using a constant potential generator.

About two weeks after the irradiation the radio-epithelitis of the mucosa makes its appearance clinically by the presence of whitish placques of exudate on an inflamed mucosa and disappears after a period of about another two weeks. Thus, within a month after the irradiation is started, the mucous membrane undergoes a cycle of inflammation, exudation, and repair. At about this time, that is the end of the fourth week, signs of a radiodermatitis of the skin appears, with redness followed by desquamation, denudation, and repair; this cycle occupying the fifth and sixth weeks after irradiation. It has been found that the duration of the evolution of these two radio lesions constitutes a biologic control over the correct application of the irradiation. If the mucosal and dermal lesions overlap, it is due to the fact that either too large a dose has been administered or the period of its administration has been too short. On the other hand, if the radio lesions are definitely separated, the dosage has been too small or else distributed over too long a period of time. A successful irradiation is followed by complete disappearance of the tumor.

It must be conceded that this is a rather heroic type of treatment. Systemic reactions are frequently very severe and may even progress to prostration. For this reason the patient must be kept under constant observation. Fluids must at all times be forced to the extreme and it is often necessary to resort to hypodermic or intravenous infusions. The use of alkalies and high-carbohydrate diets may aid in preventing such general upsets or decrease their severity. In spite of these unwelcome phenomena and the fact that not a few recurrences will be noted, the fact remains that many permanent cures are possible. Since this method of therapy has been but a recent addition to our therapeutic attack upon malignant disease, we cannot, of course, didactically conclude as to its efficacy. It has been favorably commented upon by many specialists in malignant diseases both here and abroad, and our results to date have enabled us to effect the disappearance of the primary growth in a sufficient number of cases for us to become somewhat trustful of its possibilities. We hope to report within a period of five years as to the actual lasting benefits to be derived from its use.

We should not pass the subject of roentgen therapy without mentioning the use of extremely high-tension therapy in the nature of one to three million volts. The ray emission from an x-ray tube subjected to such enormous potentials is of very short wave length and highly penetrating, approaching, if not

identical with, the gamma ray produced by the disintegration of radium. There are but few of such expensive and as yet experimental installations throughout the world. The third to be erected in this country was dedicated at the Mercy Hospital in Chicago during the past week and we will await with interest the reports dealing with its efficacy in the treatment of malignant disease.

The practical application of the Coutard method of roentgen therapy lies in those obviously inoperable and extensive growths of the hypopharynx, base of the tongue, and the extrinsic growths of the larynx. In the past these malignant neoplasms were hopelessly inoperable and could not be adequately treated by the methods of x-ray and radium in vogue at that time. Our experience with this method, while limited, enables us to offer a much more hopeful outlook to the patient afflicted with a growth situated in the areas mentioned.

The important advances in the technical use of radium have been similar to those in the use of roentgen therapy. They include more efficient screening, in order to utilize only the highly penetrating gamma ray with the complete exclusion of the irritating beta quantum, the use of large amounts of radium at a distance from the skin in order to employ crossbeam firing upon the neoplasm with as little disturbance of the skin as possible, and the administration of a cancerocidal dose to the tumor during an optimal period of time that takes into account the time required for the reproduction of the cancer cells. The name of teleoradium therapy has been applied to this method and it consists of the use of large quantities of radium at a distance. We are indeed fortunate in having at our disposal at the Michael Reese Hospital a four-gram pack, or "bomb," that enables us to utilize this highly efficient type of radium therapy. The radium is enclosed in a heavy lead chamber, 15 centimeters thick, with several portals of varying size, namely, ten, seven, and five centimeters. The pack is suspended by means of a mechanism that enables one to adjust the portal at any distance from the skin and permit a beam of gamma rays to play on any part selected. It is used at distances of six, ten, and fifteen centimeters from the skin, and several portals are utilized in order to effect a crossfire upon the neoplasm and spare the skin as much as possible. By this means, dosages of from sixty to ninety thousand milligram hours, and even more, of irradiation are possible. These doses are administered by exposures given in twenty to thirty minute seances twice daily, six hours intervening, for a period extending from six to eight weeks. The dermal manifestations of proper irradiation, such as radio-dermatitis and epithelitis, similar to those observed in the Coutard method of roentgen therapy, may make their appearance. The results obtained by this method have been very gratifying. Disappearance of the primary lesion may frequently be effected with relatively little difficulty. However, as with the Coutard method of therapy, this means of irradiation has been utilized in only a short period of time and one is unable to make definite statements as to lasting cures that may be observed. The primary results that we have seen have been sufficiently gratifying to stimulate our further and continued interest in this method of therapy.

DISCUSSION

DR. G. W. GRISWOLD, Roswell, N. M. (opening): In handling cases of this type, I have always had but one policy and this has been to put forth my very best efforts at early recognition of conditions that are already malignant or may become so and to advise the patients and refer them to those more competent. In dealing with such cases as have been described, most of which (in fact we might say one hundred per cent) will sooner or later terminate fatally, if not thoroughly competent to handle this class of work, it is a great injustice to attempt to do it.

I wish to express my personal appreciation of Dr. Guttman's paper, which I enjoyed very much.

DR. J. W. CATHCART (El Paso, Texas): I should like to ask Dr. Guttman what his reaction is toward the attacking of these growths through the interstitial use of radium, and through its use internally as well as the external applications. It has been my observation that, in some of these cases, if you can have the antrum opened up and get into the antrum with radium needles or radium seeds, much can be accomplished. Tonsils are also fairly accessible to radium seeds or needles, and in that way you get a more intensive effect by small doses placed inside a growth than you do by application from the outside.

DR. JOHN T. MOORE (Houston, Texas): I have enjoyed very much this good paper and these fine slides presented by Dr. Guttman. In our work in cancer of the mouth, we put the needles in the growth and, if the glands can be felt at all, we remove the glands, plant the radium at proper

points within the wound underneath the flap of skin and tissue, say ten or twelve hours; we take it out when we think it has been in a sufficient length of time.

We apply this same principle in bone sarcoma, by removing the entire growth, cutting away all of the bone, and putting the radium in at regular distances. I know definitely that cancer cells can be destroyed by these rays. The only difficulty is in getting the rays to the growth in sufficient amount and giving them a long enough time to destroy the cells. Now, why not all of us, without it being necessary to possess so large an amount of radium, put in small doses of radium properly screened in platinum needles, right into the midst of tumors? If it is thought best to do surgery in these cases of tumors of the tongue, tonsils, cheek, and so forth, do very careful sections and put in radium as a part of the operation. I have cases now in which there is no evidence of recurrence at all for more than five years.

DR. GUTTMAN (closing): I trust that I did not give the impression that malignant disease could only be treated by Coutard's method of roentgenotherapy. This certainly was not my intention. It was no oversight on my part that interstitial radium therapy was omitted from the article. The title limited my discussion to the recent advances. Until the advent of the newer methods of gamma-ray therapy, we employed interstitial radium therapy, with or without surgery, as the individual case indicated. We utilized the one, two, three, and four centimeter needles, containing one milligram of radium per centimeter of needle length. With adequate screening, these needles were implanted in and about the tumor and permitted to remain in situ for a period of five to seven days. Surgery must also be considered in the treatment of malignant disease and, if the growth is small and localized, electrothermic surgery is to be preferred. We restrict our indications for gamma irradiation to those growths that are obviously inoperable from the anatomical or histological point of view, or use it as an adjunct to surgery.

The American Public Health Association announces that its Sixty-third Annual Meeting will be held in Pasadena, California, September 3-6, 1934. The Western Branch of the American Public Health Association, with a membership of more than 1,200 from eleven western states, will hold its Fifth Annual Meeting at the same time.

Dr. J. D. Dunshee, Health Officer of Pasadena, has been appointed Chairman of the Local Committee on Arrangements. He will be assisted by Dr. John L. Pomeroy, President, and Dr. W. P. Shepard, Secretary of the Western Branch, and other prominent public health authorities on the west coast.

THE PLACE OF ALLERGY IN MODERN MEDICINE

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(Read before the El Paso County Medical Society, El Paso, Texas, September 11, 1933.)

The history of medicine is largely the history of succeeding ideas born of some minds with the capacity to crystallize a logical conclusion from the mass intellect of their time, followed by efforts of countless workers either to disprove or to enlarge this idea and make it a practical part of the medical, technical, and mental armamentarium. Such an idea is that of allergy, the broad ramification of which has long since passed the early experimental states and is now an accepted field of medicine. It is, however, in that portion of its evolution which is characterized by over-enthusiastic proponents on the one hand and a large body of physicians on the other who, to put it mildly, offer a bulwark of passive resistance. Fortunately there is a growing group who are attempting to reconcile these two positions and to establish the field of allergy in its proper place in general medical science. This paper is an attempt to place before you in a general way what the field has to offer to the practitioner and to the specialist in almost every field. I shall point out symptom complexes that have been proved to be of allergic origin, what is to be done in diagnosis and treatment, and what results are to be expected.

I shall make no attempt to discuss the theories of the mechanism of the allergic response, other than to say that by an allergic response we mean a pathological reaction on the part of the body to substances which elicit no abnormal response in the non-allergic individual.

GENERAL METHODS OF DIAGNOSIS

The allergist, as any other specialist, must avoid too narrow a viewpoint. Every patient must be considered as a sick individual and, as such, deserving our best efforts at history taking and physical examination, as well as careful interpretation of indicated laboratory data. That organic disease may have profound effect upon the allergic state has perhaps been incompletely recognized by most of us, account-

ing for a good percentage of failures by allergists to relieve the presenting symptoms. Suffice it to say that the allergist who does not predicate his allergy study by complete general study, is doomed to failure with a considerable number of his patients. For the study of the allergic factor, several methods are open to us. These are careful history of occurrence of symptoms, skin testing, scratch, intradermal and patch testing, and elimination of possible offenders, either by changing environment or trial dieting. For detecting sensitivity to pollens, animal epithelium, and miscellaneous dusts, the skin-testing methods are unexcelled. For diagnosticating the case of eczematous eruptions, the patch test is particularly adaptable; while, for composing a non-offending diet for the food-sensitive case, both skin testing and trial diet are valuable.

For the highest efficiency in skin testing, one must remember certain factors. A positive test means either past, present, or future allergic history. Negative tests may be due either to impotent testing material, faulty technic of the test, periodic negative phases in the skin sensitivity, or to poor choice of skin sites to be tested, when the substance tested actually is a clinical offender.

The interpretation of the reactions must be based upon the recognition of different types of skin sensitivity, and the reactions must be observed over a sufficient time interval. It must be remembered that, although the technic of the tests is relatively simple, the whole is not an A B C procedure and must be undertaken with a realization of all the complicating factors.

In food allergy, trial diets are invaluable. However, I believe that the most expeditious way to work out a food case is first to arrange a diet composed of negative skin reactors, then if necessary utilize trial diets composed only of selected negative reactors. In a series of 126 cases giving positive food tests, only five did not react to some item in each of Rowe's original elimination diets. I am convinced that much time and effort is saved by basing food trials on carefully done skin tests.

HAY-FEVER

Typical seasonal hay-fever presents no great problem of diagnosis. Diagnosing its complete cause is a more complicated matter. The offending pollens must be identified by careful history of onset and cessation of symptoms, in conjunction with complete information relating to the botany of the patient's community; by skin tests, both scratch and intradermal; and, if necessary, by conjunctival tests with dry pollen. A satisfactory treatment set must then be compounded, giving due consideration to the relative importance of the individual pollens and to their botanical relationships. Treatment should then be instituted with a very small non-reacting dose. Let me emphasize that no standard set of doses or intervals of injection can fit many patients. These should be highly individualized to meet the requirements of each patient. Several causes of failure must be kept in mind:

First, inadequate identification of offending pollens; second, inclusion in the treatment set of pollens giving positive skin tests but actually not offending; third, poor regulation of dose of extract, either too great, too small or with improper intervals between doses; fourth, failure to recognize secondary factors, either infection or other allergens, such as animal epithelial, other dusts or foods; fifth, use of impotent extracts.

The treatment should be begun at whatever time of year the patient presents himself. Perennial injections are by far the course of choice; but even coseasonal treatment, properly done, is highly effective The hay-fever season in the Southwest is so long that one may be saved two or three months of suffering, even though he does not present himself for treatment until after symptoms are well developed. Under perennial treatment for three seasons, a certain number of patients will remain free of symptoms for a varying number of seasons, although statistical evidence is yet lacking as to what percentage of cases thus treated will secure such results.

The results to be expected in the treatment of hay-fever are excellent. An analysis of sixty cases that have been under my personal observation for a sufficient length of time to warrant evaluation of the effect of treatment follows: Fifty-seven have secured 90 per cent relief or better. One is recorded 75 per cent relief. One is recorded 60 per cent relief. One is recorded 50 per cent relief. Twenty-eight of these cases have had some secondary factor, either dietary or sensitivity to some dust allergy, which had to be controlled before results were obtained. In forty cases, treatment

was first instituted after symptoms were well developed. The remaining twenty were begun pre-seasonally. These figures are convincing as to the efficacy of desensitization treatment of hay-fever; particularly so, in that seventeen of these patients were sufficiently difficult cases to have received no benefit from desensitization in previous seasons.

ASTHMA

Asthma presents to the allergist a much more complex problem than does hay-fever. In this group of patients, it is particularly important to seek out and correct organic lesions, infection, and endocrine disturbance. Only then does desensitization, elimination, or environmental change have its maximum effect. The allergens implicated in the etiology of asthma are so numerous and varied that it is useless to attempt their enumeration. In my own experience they have varied from the common pollens, foods, and dusts, to emanation from a varnished cedar chest. It is my belief that the most common factor is sensitivity to foods. Unusual causes are the scales from butterfly wings, spores of fungi, and traces of gaseous chemical preservatives found in certain dried fruits. Pathogenic or non-pathogenic bacteria may also be exciting allergens.

Aside from general measures directed to coincidental or complicating disease, the treatment of asthma is essentially the search for and elimination of or desensitization to offending allergens. This requires time and patience coupled with most searching inquiry, and one cannot expect results with incomplete methods. My patients are led to expect no results in less than six months time. The average time that is required to secure relief is considerably less than that, however.

Results in this group are also excellent. In a group of eighteen patients who have been under observation for a sufficient time, no relief was obtained in one, and 50 per cent relief obtained in one. The remaining sixteen have been relieved of their attacks except in a few isolated instances when offending allergens were contacted. These patients ranged in age from six months to sixty years and the duration of asthma had been from three months to twenty-three years. The series, of course, is too small to draw sweeping conclusions but it is certainly indicated that we may expect to control asthma more efficiently than in the past.

URTICARIA

There is no argument concerning the etiology of urticaria. By far the majority of cases are caused by foods. The intermittent nature of the condition, however, is baffling at times and there are undoubtedly secondary factors which permit certain food allergens to cause trouble at certain periods but to be inoffensive at others. This makes the use of trial diets ineffective in many cases. Also, there are many individuals who give positive skin reactions only when the condition is present. The usual intermittent cases are probably best worked out by the use of careful food diaries. The chronic cases are baffling and require careful and repeated skin tests, trial dieting, and close scrutiny of the patient's general health. The etiological role of drugs must not be overlooked in this connection.

Concerning the foregoing, there is little argument. There follows a series of abbreviated case reports selected to illustrate the ubiquity of allergic phenomena and concerning which there will probably arise protests or skepticism. The conditions and cases are selected at random, therefore little connection can be noted.

Angina Pectoris. I cite this illustrative case because of having had the opportunity of close observation over a year's time.

Mrs. A., age 63, a member of my family, was diagnosed angina pectoris by Dr. Werley after a series of rather typical attacks. Food tests were done and a number of positive reactions were secured. The most important were bananas, turnip greens, spinach, pork, cabbage, and coffee. All except coffee were known to cause gastric distress. All the items were removed from the diet. The attacks ceased and the patient rapidly gained strength. She is unusually fond of coffee, however, and during the past year has undergone a series of cycles consisting of rigid dieting, marked improvement with no attacks, a recurring conviction that coffee does not harm her, and a period of several days' return to coffee drinking climaxed by a typical attack of angina pectoris. She has never had a typical attack which was not preceded by several days of coffee drinking. Close observation of this case has convinced me of the correctness of Dr. Werley's contention that sensitivity to foods is at least one of the major factors in this condition.

Migraine. The dramatic results obtained in certain cases of migraine, after removal of offending foods from the diet, is so striking that no case should be denied the benefit of a trial along this line.

Dr. D., age 48, had had migrainous headaches periodically for many years. Food tests gave a strong positive reaction to wheat. Only indifferent attention to this item of diet has resulted in practically complete freedom from headaches.

Non-Migrainous Headache. Mrs. M., age 40, has

suffered with severe non-migrainous headaches, frontal type, for ten years (several attacks a month). She has labored under the diagnosis of sinus headaches and has visited her doctor regularly for temporary relief. Food tests were done, the offending foods were removed from the diet and there has been no return for a period of six months, except when these foods were either tried experimentally or taken inadvertently when dining away from home.

Colitis. Mr. H., age 45, has suffered from a very distressing colitis for a number of years. No relief was obtained from the usual efforts at control. A number of positive food tests were obtained and, following the removal of these foods, the symptoms disappeared. Re-addition of these foods to the diet resulted in return of symptoms in each instance.

Cyclic Vomiting. W. C., age 6, presented the symptoms of cyclic vomiting. He was first seen during a period of severe digestive upset. Due to his condition, adequate testing was out of question. His diet had been reduced to six or eight items, but symptoms were as severe as before. A trial diet was instituted containing none of the items he had been receiving, nor any wheat, eggs, or milk. His symptoms disappeared within twenty-four hours. Subsequent testing identified egg as the principal offender. He has had no further trouble over a period of three months, except when egg was given him by a neighbor who was unaware of the restriction.

Enuresis. Master H., age 7, sought relief from intractable bed-wetting. There had been scarcely a night during his life that did not end with a foul-smelling wet bed. There was a marked family history of allergy as well as bed-wetting, his father, an uncle, and a cousin having been afflicted with the condition. Skin tests were done with a large number of positive results. He was placed on a diet consisting of foods to which he had reacted negatively. The only improvement noted was that the volume of urine passed during the night was greatly reduced. A more restricted trial diet was contemplated, but the original diet was so restricted that it was deemed undesirable to cut it down further. Several days' trial of allowing no food between noon and breakfast was advised. To my surprise, the patient did not wet the bed during the three nights the trial was in progress. Following that, he was given a single item for his supper, adding a new item each night. He had no trouble until beef was added to the evening meal, with a resulting wet bed. Beef was excluded from the diet entirely. No further bed-wetting has occurred, while the diet is being gradually rebuilt to normal.

Stomatitis. Mr. R. had suffered for several years with ulceration which appeared suddenly on the tongue or cheek, lasted for several hours or days, and then suddenly disappeared. He had a rather indefinite allergic history. Several foods were found to give positive skin reactions. Upon removal of these items, the ulcerations ceased to appear except at very infrequent intervals. These occurrences were not sufficient bother to the patient to warrant further investigation.

Low-Grade Fever. Mrs. A. presented herself with hay-fever and a history suggesting food sensitivity. She had also been diagnosed as being actively tuberculous. On relief of her hay-fever, she continued to have an afternoon temperature of 1 or 1.5 degrees. When tested for sensitivity, she gave a positive reaction, among other things, to wheat. It was found, by repeated trials thereafter, that wheat would cause the appearance of low-grade fever and that exclusion of it from the diet resulted in a normal temperature. Careful checking of her chest convinced us that the earlier diagnosis of tuberculosis was in error.

There remains a group of allergic individuals who present symptoms resembling almost any well-established gastro-intestinal disorder. Chronic appendicitis, constipation, gallbladder disease, acute chronic gastritis, dysentery, peptic ulcer, toxemia from stasis, may all be simulated by reactions to offending foods. Illustrative cases could be cited at length but one outstanding one will suffice.

Miss, age 30, presented a history of having been treated, without relief, for most of the conditions mentioned above. Her appendix had been removed. Finally she was told that she had a marked visceroptosis, for which she wore an abdominal belt for six months with no improvement. By then her symptoms were so severe that she could retain no food at all except goat's milk. She was advised to remain in bed indefinitely and hope that some day she would recover. She had prepared herself for a life of invalidism. At this juncture, as a last hopeless gesture, I was consulted as to the possibility of allergy playing a part in her condition. Her personal and family history was filled with allergy. She had had hay-fever, asthma, eczema, and hives, at various periods, as well as numerous food idiosyncrasies in childhood. Food tests showed positive skin reactions. Careful physical examination showed no evidence of organic pathology nor visceroptosis. She was given an initial diet of goat's milk, spinach, rice, lamb, pure rye bread, and honey. Above all she was assured that there was no organic disease, that she could throw away her abdominal belt and that she should remain in bed only if it suited her fancy. Her first meal was retained without discomfort and after ten days she was gaining weight and strength. In three months, her diet had been sufficiently enlarged to be well balanced, she had gained twenty pounds and had taken to mountain climbing for exercise.

This case illustrates two outstanding features. One is the capacity of an allergic state to produce varied and severe symptoms. The other is the wide-spread habit of many medical men to ignore very definite historical data pointing clearly to a possibility of allergy as a major factor in various and sundry ills.

It has been established that many other symptoms and conditions not mentioned above, may have an allergic basis. To mention some of them only, there are eczema pruritis, numerous obscure skin conditions, conjunctivitis, frequency of urination, Menier's syndrome, recurrent colds, chronic sinus symptoms, and bronchial irritation with cough. It would make this discussion too tedious to elaborate upon them.

There are several general points which I wish to leave with you:

(1) The manifestation of the allergic state is protean in nature.

(2) Allergic sensitivity is encountered much more frequently than is generally supposed.

(3) A few indifferent skin tests do not constitute a satisfactory basis for controlling allergic conditions.

(4) Competent and conscientious work with patients over a sufficient period of time will, in the majority of cases, produce satisfactory results if the allergic nature of the condition has been established.

(5) The definite sign posts pointing to an allergic factor in many conditions must not be ignored.

In conclusion, I wish to make clear that I do not want to be placed in the position of seeming to advocate that allergy will explain all our problems or that it is to be considered first in diagnosis of all the conditions discussed. But I do wish to emphasize that, when other causes for these symptoms have been ruled out, it must not be forgotten that allergy may explain them; and that careful inquiry into the personal and family allergic history will often point the road to a diagnosis that is otherwise obscure.

ALLERGY IN RELATION TO THE UROGENITAL TRACT

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(Read before the Nineteenth Annual Session of the Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

One of the first questions occurring to those interested in the study of allergy was whether the manifestations of sensitization were confined to certain organs or whether all of the organs of the body took part, in greater or less degree, in the changes occurring in this peculiar state. The manifestations in the skin and respiratory tract are familiar to every one. Do similar manifestations take place elsewhere? The observations bearing on this question are of two kinds, experimental and clinical. Both are subject to varying interpretations, but there is little doubt that it has been shown that various organs and tissues, such as uterus and intestinal wall, are altered by sensitization, and react differently after it. We are here concerned only with the extent to which the organs and tissues of the urogenital system are affected by sensitization, and it must be said at once that the literature is scanty and unsatisfactory.

Experimental findings will be first considered. Long and Finner[1] perfused with tuberculin the kidney of a tuberculous guinea pig, and found, four days later, coagulation necrosis of the glomeruli and tubules. Controls showed that this did not occur in healthy animals. Helper and Simonds[2] sensitized rabbits with various proteins and then injected the same proteins directly into the kidney substance with syringe and needle. Controls showed hemorrhage from the trauma of the needle, but in the sensitized animals there was necrosis in addition to the hemorrhage. The necrosis was more extensive in the cortex than in the medulla. Longcope,[3] suspecting that repeated anaphylactic shock might have something to do with chronic nephritis, subjected rabbits to long series of such shocks, at the end of which he found marked nephritic changes in the kidneys. Boughton[4], however, showed that rabbits are extremely subject to chronic nephritis, either spontaneously or as the result of experimental conditions; so Longcope's theory must remain for the present as unproved. Experimenters have hypothesized a good deal. Some experiments have indicated that inflamed or injured tissues may react more strongly than intact tissues—so much so that they may react to a dose of allergen so small that it does not affect intact tissues at all, even in a highly sensitized animal. To Hepler and Simonds this suggests the possibility of such reactions in kidneys already damaged by other pathological processes.

As to the bladder, Mainwaring[5] felt that he had demonstrated that the bladder of a sensitized animal contracted on perfusion with the allergen just as does the uterus, but Grove[6] has shown that the contractions noted were due to asphyxia, and under controlled conditions obtained no contractions. We find, therefore, no objective experimental evidence of allergic reactions in the bladder muscle.

There appears to be some evidence that the testis may be made to show an allergic reaction. Hirsch and d'Andrea[7] injected a suspension of mycelial powder in the testes of guinea pigs infected with coccidiosis and obtained what they considered to be a specific allergic reaction, consisting of edema and cellular infil-

tration. Long infected the testes of guinea pigs with tubercle bacilli, and found the initial reaction different in normal pigs and in those already tuberculous. Later the non-immune animals showed more tendency to necrosis and less to fibrosis. The testes of tuberculous guinea pigs showed an intense reaction to injections of tuberculin, with necrosis of the germinal epithelium and sterilization, but no such reaction could be obtained after sensitization of the non-tuberculous animal with tuberculin or with other foreign proteins such as gliadin and egg-white. In other words, while marked reactions can be obtained in the testes of animals infected with coccidiosis and tuberculosis by the injection of allergens derived from the infecting agents, there is no evidence of any allergic reaction occurring after simple sensitization with these or any other allergens. If we are to believe the findings of Hepler and Simonds, this places the testis in a different category from the kidney. I feel, however, that much more work is necessary before reaching any such conclusion. Yun[10] reports a rather pretentious study of the effects of orchidectomy and of injections of testicular substance on anaphylactic shock. He concludes that the presence of the testicular hormone is necessary for anaphylactic shock to occur in full force; that is, if the testes are removed, anaphylaxis is "inhibited" or reduced in severity. It seems to me that these conclusions are based on very scanty data, and it is interesting to note in this connection that Hawkins[11] reports excellent results from the treatment of asthma by the subcutaneous injection of fresh testicular emulsion. Such contradictory reports make one very skeptical, and demand more thorough and careful studies, if we are ever to ascertain the facts.

There is no occasion to do more than mention the work done on allergens isolated from the urine and used in the diagnosis and treatment of human allergic conditions.[12] These substances are supposed to be excreted unchanged by the kidneys, and the urinary tract plays a purely passive role. There is as yet no evidence that the passage of these allergens through the kidneys does them any harm.

A glance over the data just given shows that there is very slight positive evidence that sensitization to any foreign substance causes any demonstrable local sensitization of any urogenital organ except the uterus. Strong local reactions may occur, however, in animals actually infected with such diseases as tuberculosis, and probably play an important role in determining the spread of the disease to the various organs of the urogenital tract. These reactions certainly appear to have much in common with simple allergic reactions, but there is equally certainly some deep-seated and important difference between them, which remains to be fully elucidated.

Turning to the clinical side, I believe that it can be stated that clinical manifestations of allergy in the urogenital organs are slight and rare, for the simple reason that there is such a dearth of reports of them at a time when the general subject of allergy has received the widest and most earnest attention.

In the kidneys, allergy has been suspected of causing chronic nephritis, but, as has been stated, there is as yet no proof. Paroxysmal hemoglobinuria may be an expression of allergy to cold, but here again the kidneys play a passive role. During severe cases of anaphylaxis, albumin, casts, and blood may appear in the urine, as in any severe intoxication, but evidence of permanent damage is lacking.

Since the most important part of the ureter is smooth muscle, allergy has been invoked as an explanation of certain cases of ureteral spasm and colic without other obvious cause. It is certain, however, that this is not a common accompaniment of the usual allergic state, and so many factors are present in such cases that nothing definite can yet be said.

In spite of the absence of supporting experimental evidence, most of the clinical data worthy of serious consideration concern the bladder. Eleven years ago Duke[13] called attention to certain cases in which severe hay-fever and asthma were accompanied by painful and frequent urination which disappeared after successful treatment of the allergic condition. In addition the urine was normal at all times. Apparently this symptom complex is not very uncommon, as I have spoken to many who have observed it. Similar symptoms are also seen sometimes in cases having a reaction during a course of immunizing treatment, and these occur in both pollen and food allergy cases. These are called "vesical crises," particularly if the bladder symptoms predominate over the others. I might say

in passing that the prolonged use of ephedrin may cause urinary difficulty and even retention, which condition must be distinguished from the allergic bladder. More recently Salen[6] has reported cases similar to those of Duke, but adds the observation that one of them showed pus in the urine during the attacks, although urinary cultures were sterile. These pus cells proved to be practically all eosinophiles and disappeared completely after successful treatment of the allergic condition. He also makes the curious observation that some of his asthmatics who suffered from frequent and urgent urination stated that voiding relieved the asthma somewhat. Duke's patients were examined cystoscopically, with negative findings, and I can discover no other data as to the mechanism of the bladder changes. Enuresis may result from this type of bladder change in children, and sometimes accompanies an allergic state. This idea is supported by the disappearance of the enuresis after successful treatment of the allergic condition. It is doubtful, however, whether all cases of enuresis can be ascribed to allergy. Hay-fever and asthma may disappear temporarily after the relief of diseased conditions in the urogenital tract, just as after other surgical operations.

Under the heading of the urethra might be placed the great quantity of work done on skin tests and vaccine treatment for gonorrhea, but I hesitate to enter this field, where the volume of literature is so great and the core of solid proved facts so small. With your permission, therefore, I shall pass it over. Allergic urethritis seems theoretically possible, but I know of no convincing case.

The same can be said of the prostate and seminal vesicles. I have seen one case in which pain in the prostate and vesicles always accompanied an attack of hay-fever and sinusitis, and another in which prostatic irritation and priapism appeared to follow the drinking of home-brewed beer, but it must be said that both of these patients were physicians who were particularly interested in allergy. I am sure many of you could recall such interesting and suggestive observations, but unfortunately they do not constitute acceptable evidence on which to base a statement of fact.

Since it is apparent that manifestations of pure allergy in the urogenital tract are neither frequent nor very serious, discussion must take the line of hypothesizing about the more obscure effects which allergy may have as a complicating or etiological factor in other diseases of the urogenital tract. If it is a fact that tissues damaged by infection or trauma are more prone to undergo allergic reactions, we may account in this way for some of the exacerbations, recurrences, and other alterations in severity which characterize long-continued infections of these organs. On the other hand, if we assume that unrecognized allergic reactions occur in the urogenital tract, they may form starting points for chronic infections, as they do in the respiratory tract. These possibilities provide, it seems to me, interesting but difficult fields for future study and experimentation, but today they occupy the realm of practically pure theory. The more complicated problem of the so-called infectious allergy, best illustrated in tuberculosis, undoubtedly has important connotations for urology. We have all seen clear instances of the acute, even violent, onset of epididymal tuberculosis during generalized tuberculin reactions in tuberculous patients. Here, however, we must await further clarification of the entire phenomenon. If tubercle bacilli, but not tuberculin, can cause this type of sensitization, it seems clear that the bacilli must produce other toxic products not contained in tuberculin, and with which we are not yet familiar. It is possible that a better knowledge along these lines will throw a great light on the problems of infection for the entire body, as well as for the urogenital tract.

I feel very strongly that the conception of allergy has thrown open to our view a tremendous region full of interest and even promise, but that we have scarcely begun to advance into it. Much of the work that has been done is of far too superficial character, and real progress must depend upon greater knowledge of the fundamental principles concerned, and how they take their places in the general concept of human physiology and pathology.

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DISCUSSION

DR. A. W. MULTHAUF (El Paso): The essayist should be complimented on the splendid presentation of his subject. He has had a difficult subject to present, because, as he has said, the available data must be carefully analyzed to get the facts, as the matter of allergic interpretation is still in its infancy.

It has not been so long ago but what we can all remember, when vague diagnostic problems were diagnosed as neurasthenia. A great many of these diagnoses were undoubtedly correct, but undoubtedly a great many pathological cases were likewise overlooked. I bear in mind the adivce of a preceptor of mine who told us, "Gentlemen, when you are confronted with a case that has been called neu- overlooked. I bear in mind the advice of a preroneous and give the case everything that you got." I am very much afraid that allergy is going through the same evolution. To admit that allergy is not encountered is to admit one's ignorance of the advance of medicine. However, I see no excuse for the sane individual losing control of his process of reasoning and going off half-cocked, to use a slang expression, and calling cases allergic which, let us say, are borderline ones, which I am prone to feel will be the case within the next few years.

To make our data available we must give these cases the most careful investigation from the standpoint of history-taking as well as laboratory tests. I am emphatically convinced that we encounter allergic phenomena in the urinary tract, as I have had two cases that are proved from both the standpoints that I enumerated.

I have purposely taken the vitriolic attitude in my preface, because already we hear the expression used, "Well, this case must have an allergic background." Now, gentlemen, if we succumb too readily to this interpretation we can all see the effect it will have on allergy, which condition, beyond question, does have and will have a definite place in future medicine.

IMPRESSIONS OF SURGERY IN EUROPE

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(Read before the El Paso County Medical Society at its regular meeting, November 13, 1933.)

"Der Herr Professor!"

A stage whisper electrifies the operating room. Four assistants, an anesthetist, and two scrubbed nurses snap to attention. Doing nothing in particular, they betray their nervousness. The patient has already been under anesthesia for twenty minutes, lest the Professor be kept waiting.

A quick step is heard. A small, wiry man with scanty sandy hair strides in with the air of a dictator. The sleeves of his operating gown reach his elbows. Forearms and hands are bare. He wears no cap or mask. It is the great Sauerbruch.

He wastes no time. Almost in one movement he steps upon his stool, grasps a scalpel and incises the patient's chest from vertebrae to axilla. In incredibly short time, periosteum has been raised, ribs resected, and the pleural cavity opened, as boldly as one might enter the abdomen. A bullet lodged in the lower lobe is palpated and removed. The surgeon growls as he works. One false move by an assistant draws a storm of abuse. Nurses tremble lest instruments be hurled across the room. Visiting surgeons, safely perched on a platform, are ignored.

As quickly as he came, Sauerbruch leaves. His first assistant is to check the hemorrhage and close the wound. You wonder why the bullet, encapsulated for eighteen years, was removed, whether the patient's interest was paramount. Such is your first glimpse of German surgery.

Contrast this picture with a scene in an English operating room. Mr. Gordon-Taylor (an English surgeon is always called "Mister") is resecting a stomach, for ulcer. He wears a mask and gloves, but above the collar of his gown you may notice a starched collar and bow tie; he has not bothered to change from street clothes today. As he works, skillfully, quietly, he talks to visiting surgeons. This case is a young man of twenty-eight

years. Experience has taught Gordon-Taylor to resect stomachs early, he tells you. Surgeon, assistants, and nurses cooperate smoothly and a neat operation is quickly accomplished. Perhaps you would like to have tea with Gordon-Taylor before the next operation, for it is late afternoon.

Mornings in London there is less surgery. Looking about for suitable work, you find a course of some kind the best available occupation. Everything for post-graduates in London is offered in courses. Every course leads to an examination. The American student of medicine, State Board examination passed, can forget exams, but the English student has the prospect of examinations for many years, before he can write after his name the coveted degrees.

There are in London sixty medical schools. Each is connected with a teaching hospital, of which it is an integral part, physically and financially. And each is a part of London University. In these schools are constantly found large classes of doctors, from Australia, South Africa, all Britain's far-flung dependencies, studying for the F. R. C. S. or the F. R. C. P. examinations. Some have sat for the preliminary exams five or six times. Nothing daunted, they are back for another trial. Speak to one of the examiners, a physiologist of note, and you are politely told—the English are always polite—that you, an American, may as well save your time and money. The Royal College of Surgeons is strictly a British institution.

However, if you wish to join one of the F. R. C. S. classes, that is another matter. Fundamental subjects you will review, with excellent lectures by prominent men, e. g., physiology under brilliant young Sampson Wright, anatomy under Professor Yates. The English are ardent students of anatomy. In every consultation, detailed anatomy is heard discussed as familiarly as symptoms.

Then there will be excellent clinical work. In old St. Bartholomew's Hospital, founded in the year 1123, it may be your good fortune to make staff rounds regularly with Professor Gask. St. Bart's presents a surgical unit as modern as the main hospital is ancient. Surgery here is conservative and carefully planned, well executed. Gask's work on surgery of the sympatheetic system is attracting attention. One case you may see of megalocolon in a girl of fifteen years, relieved by stripping the aorta from the inferior mesenteric artery down to the bifurcation. Numerous cases of Raynaud's disease and similar vascular conditions of the extremities are seen, many with cures effected by lumbar sympathectomy. Thyroid disease is found quite prevalent, the treatment not varying essentially from our own. Abdominal surgery is also quite similar to American work.

One striking contrast in English clinics is the prevalence of carcinoma of the tongue and lips, as compared with the incidence in America. A British surgeon opines that poor oral hygiene may be the etiological factor. You are surprised to learn that in this day of radium, there are eminent London surgeons who employ radical surgery in the treatment of these cases, even for the early stage.

You find it convenient to spend mornings in class or dissecting room at Middlesex Hospital. Afternoons you travel miles across widespread old London, to see this surgeon or that in action. A list of the day's operations is posted each morning in the Royal Society of Medicine headquarters. In any amphitheatre, you will be coolly but courteously treated. Should you be so fortunate as to carry letters of introduction, you will find a cordial welcome.

One day you visit the Brompton Cancer Hospital to see Abel, understudy of the aging surgeon Miles. perform a technically perfect resection of the rectum. Confirming your previous opinion that with spinal anesthesia there is less shock, Abel uses spinal. His two-in-one abdomino-perineal resection is completed in less than one hour. You are then invited, with a score of visitors from the corners of the globe, to see a movie reel of the same operation, a most impressive demonstration.

Another day you brave a cold, drizzling rain to visit Chelsea Hospital for Women, where Victor Bonney is operating just before retiring from active service. Bonney will tell you that he described the so-called Sturmdorff amputation of the cervix in 1912, four years before it was recorded by the German. You find him an agreeable old gentleman, given to many peculiarities of technic, but a wonderful operator. His gynecological procedures are quite conservative as compared with what the Germans will show you. For instance, supravag-

inal hysterectomy is often performed by the English, rarely by the Germans. You see Bonney perform a classical cesarean section for removal of a three-month-old dead fetus, and learn that such is common practice in England and on the continent.

Again, you find yourself in an operating room of Brompton Tuberculosis Hospital. J. E. H. Roberts does a neat lobectomy in less than an hour, removing the lower lobe for bronchiectasis. The anesthesia is gas, under positive pressure. English anesthetics are as excellent as German are poor. Roberts' technic is essentially the same as that of Brunn in San Francisco. (See S. G. O. Nov., 1932.)

Here at Brompton Tuberculosis Hospital, Tudor Edwards will demonstrate his treatment of pulmonary carcinoma with radon needles. The needles are small pointed bullets, injected by a specially constructed catheter of small bore. The tumor is reached either by bronchoscope or by plunging directly through intercostal spaces into the lung tissue. Skeptical as you may be regarding cancer cures, after seeing one patient who has gained thirty pounds in weight, recovered the use of his voice, and shown remarkable clearing of the x-ray findings, you admit that this must be the best treatment yet advanced for carcinoma of the lung.

Middlesex Hospital presents mute evidence of the financial difficulties encountered by all London hospitals, the majority of which are supported by voluntary subscription. A giant steel framework towers above older buildings of Middlesex, but no workmen are in sight. In Middlesex you watch Sampson Handley perform a splenectomy or equally radical surgery and learn of his devotion to the cautery. Following radical amputation of the breast with cautery, Handley leaves radium needles inserted in the supraclavicular and intercostal spaces for forty-eight hours.

One morning you take a long ride out to old Hammersmith Hospital, and there learn of plastic surgery from Sir Harold Gillies. If modern surgery has performed any miracles, certainly the reconstructive operations of Gillies with Wolfe grafts and tube flaps are such. You are impressed with the infinite patience of this surgeon. No artist could be more particular about the details of his work. For facial operations, he employs intratracheal anesthesia. Later, in St. Bartholomew's Hospital you have occasion to examine a patient on whom, for sarcoma, Gillies has excised the right rectus muscle with its sheath and a large section of the abdominal wall, replacing the lost tissue with a huge flap swung over from the left half of the abdomen, a truly massive graft, with excellent result.

Other surgeons you will meet, too numerous to mention. Your three months' course in London may be supplemented if you wish. The Fellowship of Medicine offers courses of six weeks' duration, in any specialty, with bedside instruction under competent men. But in England there will be no opportunity to practice surgery on the living patient and you may consider yourself fortunate if permitted to examine patients closely. The same is true, of course, for an Englishman who comes to America. Embarking on the English Channel, you feel that your time in London has been well spent, for many ideas of clinical importance have been impressed, many points of surgical technic, aside from a comprehensive review of anatomy and physiology.

In Berlin and in Vienna, post-graduate work is thoroughly commercialized. The Dozentenvereinigung attached to the University of Berlin corresponds to the American Medical Association of Vienna. Through payment of a stipulated fee to either of these organizations, you may have instruction in any branch of medicine or surgery, through as many weeks as you like—payment in advance, please. If you desire surgery, a Berlin surgeon will in his private Klinik permit you to operate on his private patients for one hundred and fifty dollars per month. That is, such a condition obtained until the recent shake-up by the Hitler regime.

You will not study in Germany, of course, without learning some pathology. For as pathologists Germans lead the world. In their larger charity institutions, autopsy on ninety per cent of deceased patients is a common record. You sign for work with Professor Ludwig Pick, influenced as much by his knowledge of English as by his reputation in pathology. Every day you perform one or two complete postmortems and hear Pick's discussion of eight or twelve cases, to you in English, to others in German. You feel disappointed that clinical records on each case are not better correlated

with autopsy findings, but learn that Germans love pathology for itself alone, not for its clinical application.

Evenings you struggle with the German language, in Berlitz School or under a private teacher. For even though many Germans speak English after a fashion, there are avenues of work closed to one who cannot speak German. Having acquired some knowledge of the language, you have the opportunity of studying microscopic gynecological pathology under Robert Meyer. An outstanding exception among mercenary colleagues, Meyer will accept no fee for instruction. Every afternoon you may spend three or four hours examining duplicate stained sections with this kindly old gentleman. You will scarcely receive a welcome unless you intend to stay six months or more.

Should you be interested in obstetrics or gynecology, a large field of clinical material is found in Berlin. You sign for several courses of two to four weeks' duration, some running concurrently. In Strassmann's Klinik there is opportunity to examine dozens of patients daily. Strassmann's treatment of pelvic carcinoma is interesting because unique. He uses radium in the peritoneal cavity, leaving a fistula after operation through which a platinum tube of radium may be inserted.

In Stoeckel's and Wagner's Kliniks you examine many patients, discuss therapy, and perform cystoscopies, for the cystoscope is here not exclusively the property of G-U specialists any more than we discard stethoscopes in favor of the internist. Here also you learn salpingography, with lipiodol the preferred fluid. In treatment of acute pelvic infections, you find the Germans ultra-conservative. X-ray therapy with kurzwellen (short rays) is the method of choice. In Wagner's Klinik is seen a 600,000 volt machine, the world's largest. Diathermy is also used.

In treatment of carcinoma, however, both Stoeckel and Wagner swing to the radical side. The Wertheim is Wagner's favorite operation for carcinoma of the cervix, even advanced cases, while for similar malignancies, Stoeckel employs the Schauta technic, radical vaginal hysterectomy. These operations are technical feats, beautifully executed, but with a high mortality, and the end results show no more cures than our radium therapy can boast—about twenty-five per cent of five-year cures. The anesthetic is frequently spinal. So much the better for the patient, for the Germans give very poor anesthesias with ether or gas.

In Stoeckel's Klinik you see a patient admitted in eclamptic convulsions. She is rushed to the operating room and there subjected to cesarean section. She recovers and the baby lives. Such radical treatment, long rejected in the United States, can nevertheless, in skilled hands, boast as low a mortality rate as we can show from conservative therapy. Obstetrics in Berlin, you learn, has not advanced further than in America. In a new hospital of modernistic architecture, well-equipped, women struggle through delivery in a ward of six beds, without benefit of anesthesia. Cesarean section is done on slight provocation. Patients are often allowed to sustain second or third degree lacerations without an attempt at episiotomy having been made. In the homes of the poor, operative deliveries are done under chloroform anesthesia.

Shocking to the newly-arrived American is the practice of operating without gloves. Sauerbruch, Strassmann, Wagner, and other famous surgeons, enter the peritoneal cavity with bare hands. Scrupulous pre-operative preparation of the hands, with frequent washings during operations, seems to accomplish all that rubber gloves can do, but you are not convinced. Another intriguing point of technic is the practice of suturing peritoneum to skin, by six or eight interrupted sutures, immediately after entering the peritoneal cavity. The German operating room is a huge room, well equipped, but set for several operations simultaneously. One patient under local or spinal anesthesia may have to listen to the snorting of another taking ether on an adjacent table. Your general impressions of German surgery are that the technic is excellent, the procedure usually radical, the operation more important than the patient.

In the use of mechanical appliances, Germans excel. Run out to a suburb of Berlin and spend a morning with Professor Kayser, and you see a large variety of cautery instruments in use. For advanced carcinoma of the breast, Kayser literally cooks the tissues by moving a cautery roller over the diseased area, then excises this tissue with a cautery knife. Von Lichtenburg, famous for his work with

uroselectan, may be observed removing a bladder tumor with cautery, the patient squirming and groaning under a "peri-dural" anesthesia.

No visit to Berlin is complete without meeting Professor A. W. Meyer, whose Chesterfieldian manner contrasts so strikingly with the gruffness of many Teutonic colleagues. Meyer shows you, with pardonable pride, three or four thrombi removed from the pulmonary artery in moribund patients—result: four patients still alive.

For bored European surgeons, plastic surgery affords a new hobby. E. N. T. specialist or general surgeon, they love it. One day you visit the Klinik of Professor Halle, noted in the nose and throat literature, and find him remodeling the breasts of a young woman. For slight indication or none at all, a German woman may be subjected to a prolonged anesthesia (often five hours) and this tedious procedure. As usual, one cannot criticize the operative technic.

Berlin has accepted a new intravenous anesthesia, evipan. Injected by vein until the patient falls asleep, this drug produces anesthesia for fifteen to twenty minutes, apparently ideal for use in curettage of the uterus, reduction of fractures, or other quick operations. Germans claim to use evipan for appendectomies and even gastric resections! In a series of approximately ten thousand cases, there have been three deaths reported.

En route to Vienna you spend a day in Prague, that historic old city of Czechoslovakia. A visit to the Women's Klinik of Professor Jerie is worth while. Here English is practically unknown, although American journals are seen on the library shelves. You are fortunate enough to find a young interne who speaks German. Technic here is found similar to that of Berlin, with the important exception that radical pelvic surgery has been abolished in favor of radium for the treatment of carcinoma. Lumbar anesthesia is quite commonly used.

Vienna is disappointing to the surgeon. Government regulations bar foreigners from treating patients. You may join the American Medical Association, whose office in Alserstrasse is headquarters for most Americans. Courses are offered in everything. You visit huge Allgemeiner Krankenhaus, a four thousand bed hospital, and sit for hours at a time under Professor Chiari, eminent pathologist. Here, as in Berlin, pathology is a favorite study.

If fortunate enough to hear lectures by Finsterer on gastric surgery, you feel amply repaid for having visited Vienna. His appearance that of a seedy pawnshop keeper, this old gentleman will in very good English report long series of peptic ulcer, more than ninety per cent of them cured by resecting two-thirds of the stomach. He insists that radical surgery turns the trick. It is a privilege to watch the meticulous technic of Finsterer as he resects a cecum for carcinoma. Local anesthesia is his favorite, for by its use he claims to eliminate shock. Time means nothing to him. Three or four hours is the average time for a resection.

Gynecological surgery by Weibel and others is found similar to that in Berlin, radical. As in Germany, anesthetics are poor. There is the same gruffness of manner, the same exaltation of the surgeon high above his patient and his assistants.

Adverse impressions regarding socialized medicine accumulate as you travel through Europe. In England, a university professor who sees only hospital and clinic patients, tells you the panel system is good for the poor man. But a young physician who has tried panel practice vows he would rather forsake the practice of medicine. One cannot, he protests, do justice to the large number of patients a doctor must see in order to earn a living. Income of doctors is not in proportion to quality of work, but according to number of patients seen. Abuses are numerous. The doctor who will not give his patients sick leave upon request, finds his panel dwindling away to a less scrupulous man.

In Berlin, you are told that the insurance societies have much money to spend for handsome office buildings and kliniks, but very little for drugs and doctors. In a well established private klinik such as Strassmann's, a weekly report is sent the Versicherungen (insurance societies) regarding the number of patients treated. Not until its check is received does the klinik know what amount to expect, for the weekly receipts are pro-rated. About $1.50 per day is paid the klinik for each hospitalized patient, but for operation on any patient there is an extra fee. This explains why so many patients are seen in the klinik with operable conditions, treated by non-operative methods. It

is difficult to explain, however, why one sees an occasional case of advanced carcinoma, treated by some physician for a long time, sent to the University Hospital when inoperable. Is it because the poor practitioner needed this patient to swell his roll of patients, or was he too busy to examine the patient? For an obstetrical case, the German surgeon receives about $5.00; for major operations, he is fortunate to get $25.00.

Your German teacher in the Berlitz School, a little man who wears thick-lensed spectacles because gassed in the war, believes the insurance system a good one. He adds, however, that he carries insurance in the Versicherung which permits choice of doctor, whereas the Krankassen give the patient no choice of doctor.

University appointments are at a premium in Germany, for on the university staff a young M. D. is assured of at least a living income, whereas outside he is at the mercy of insurance societies.

In Prague, your bus driver points proudly to the magnificent structure which serves as headquarters for the Health Insurance Societies. A young surgeon tells you the system is disliked by the doctors, but is good for the patients. A doctor cannot practice without appointment by the Health Insurance Societies.

On the train through Switzerland, a middle-aged woman who holds a professorship in the University of Vienna—she speaks perfect English—admits that she is insured in an Austrian Health Society, by compulsion, but that she has a private doctor of her own, as have all her friends. Apparently, the insurance system does not hold favor among educated Austrians.

Whatever the future may hold for American medicine, you feel that state medicine is far worse than our present system. And although they have much to teach us, you say good-bye to European surgeons with a feeling that surgery in the United States is unsurpassed.

SMALLPOX

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(Read before the El Paso County Medical Society November 27, 1933.)

Smallpox, or variola, is an acute contagious disease, characterized by high fever and followed in regular order by an eruption, a papule, a vesicle and a pustule. The disease has been known from the earliest antiquity. Its known history goes back to the tenth century, when it ravaged China and other Asiatic countries. It spread to Europe in the thirteenth century, where it raged with such virulence that whole cities were almost depopulated. It appeared in the West Indies in the fifteenth century and from there was carried to Mexico by Spanish soldiers, where it spread rapidly. During the next fifty years it carried off over three and a half million of the population. It first appeared on the Atlantic coast of what is now the United States in the year 1649. It soon spread to the Indians and whole tribes were almost wiped out.

Smallpox is generally divided into four clinical groups: the hemorrhagic or so-called "black smallpox," the confluent, the discrete, and varioloid. These terms refer to the severity of the disease only. In the hemorrhagic form the vesicles fill with blood instead of pus, giving the patient the appearance of being covered by "blood blisters." There is also often hemorrhage from the various mucous surfaces of the body. Sometimes, where the patient dies before the eruptive stage is reached, there may be splotches of what appears like purpura hemorrhagica, instead of blood-filled visicles. In Europe, where the disease in its most virulent form swept over the country during the Thirteenth Century, it was known as the "black death."

Next in order comes the confluent form. In this form the pustules are filled with pus and they stand so close together that they coalesce and form a solid pustule. This is especially true of the face, where the eruption is always thickest. Then we have the discrete form, which is the mild form of smallpox. It is characterized by a mildness throughout and the presence of very few pustules. I have known cases in which there were less than a dozen

pustules on the entire body. And now we come to varioloid, which is nothing more than a case of smallpox modified by a previous vaccination. This is nearly always very mild, depending on how long it has been since there was a successful vaccination. There is no difference in the contagiousness of the various clinical forms. A mild attack of varioloid is fully as contagious as the most virulent case of confluent smallpox. The germs of smallpox soon die if they are exposed to the open air and sunshine. This is especially true of our arid western country, where there is much bright sunshine. On the contrary, if the germs be packed away in a dark close place, they will retain their vitality for many months. The following story, which I know to be reliable, will illustrate this statement. About forty-five years ago a cowboy rode up to a ranch house in New Mexico, very ill with smallpox. He was placed in an outhouse, a distance from the ranch house proper, and there he died, a few days later. He was buried and the bedclothing in the room where the man died, was stuffed down into a large box and the room was closed. Having a use for the house some eighteen months later, the ranchman ordered a couple of Mexican ranch hands to pile the bedding outside and set fire to it. Unfortunately, about the time they were ready to apply the match, along came half a dozen Apache Indians. The Indians begged for the blankets and got them. They also got an epidemic of smallpox that is remembered on the reservation to this day. Incidentally, the ranchman came near going to Federal prison for giving smallpox to the wards of Uncle Sam. Had that clothing been exposed to air and sun three days, not an Indian would have contracted the disease.

Smallpox is generally ushered in by a chill which is always followed by a very high fever. There is aching of the body, similar to that caused by influenza. The aching is especially pronounced in the lumbar region. The temperature shoots up at once to one hundred and five or six. This sudden high temperature is the only diagnostic symptom we have in the febrile stage of the disease. I once diagnosed a case as smallpox, the first day of the disease, because the temperature was one hundred and six. There is often active delirium in this stage of the disease and this is nearly always true of drunkards. On the second to the fifth day, the eruption begins to appear: if on the second or third day, a very severe attack may be predicted; if delayed to the fourth or fifth day a milder form of the disease may be expected. Following the appearance of the eruption, the temperature drops and the patient feels a period of well-being. Following the eruption we next have in regular order papules, vesicles, and pustules. The pustules are always irregularly round in shape and are hard and firm to the touch and yellowish in appearance. At the eighth to the twelfth day, desiccation begins. The pustule assumes an umbilicated appearance and begins to shrivel up. A scab forms and this finally slips off and leaves an ugly pit, which remains for life. In discrete or varioloid cases, there is little or no pitting. Confluent cases are the ones that pit badly. About the time desiccation begins in these cases there arises from the patient's body an odor that smells to high heaven. The patient is almost literally rotten and is certainly a most deplorable sight. Blindness sometimes results from this form of the disease. I saw many cases in Mexico when I was in practice in that country in 1893. Up to about that time smallpox was as common in that country as are colds in this country in winter time. It was considered a child's disease, and justly so, because the adults all had the disease in infancy. At that time very little attention was paid to the disease, for two reasons: (1) The disease had been endemic there so long that the people had built up an immunity, with the result that the attack was generally mild and very rarely proved fatal; (2) the spirit of fatalism among the peon classes. They argue that if it is God's will to take the child, He will do so and why should they worry about it. Many times I have been called into homes to see a patient suffering from some other disease and have found a child with smallpox and they thought so little of the matter that I was not asked to prescribe for the child. More often they did not even mention the matter of the child's having smallpox.

The diagnosis of smallpox is not always easy; especially during the febrile stage. The fever and aching resemble those in influenza, tonsillitis, measles, and several other diseases. As I pointed out before, there is only one diagnostic point at this stage and that is the very high fever from the start. If the case is going to be

mild in character, even this point is lacking. The public expects the practitioner to know and not to guess, and woe betide him who diagnoses a case of smallpox as something else and lets the case get away from him and scatter the disease far and wide. In 1897 there was considerable smallpox in El Paso, amounting almost to an epidemic. At that time the city health officer was a pioneer physician and a man of ability in his profession. He was called one day to see a man and found him sitting up. He had a few pustules on his face and his employer had sent him home with instruction to call in the city health officer. The health officer pronounced the case a mild chicken-pox and told the man he might return to work in a day or two. The man decided to visit a relative in southeastern New Mexico and took the train when he had possibly not more than half a dozen small pustules on his face and there were less than a dozen on the man's whole body. He had been vaccinated twenty-eight years previously, with a good take. His case was extremely mild, yet he was a carrier, just as though he had a case of the most virulent form, and he scattered smallpox all over west Texas and southeastern New Mexico. Many deaths and much suffering resulted. Needless to say, the health officer came in for a lot of caustic criticism. He was lambasted unmercifully by the press. I have made mistakes in differential diagnosis between smallpox and other diseases and I probably will do so again. Others in this society will probably do the same.

The following two cases will illustrate the ease with which mistaken diagnosis is made. Some years ago, when the late Doctor Klutz was city health officer of El Paso, I had charge of the eruptive hospital. We were running at that time from twenty to forty-five cases continuously. One morning, as doctor Klutz was coming down to his office, he was called in to see a young man and diagnosed the case as smallpox and ordered him to the eruptive hospital. He phoned me what he had done and I saw the man that afternoon. He was in the pustular stage of what appeared to be a rather mild attack of confluent smallpox. The pustules were very thick on his face but did not coalesce. Next morning I decided there was something very peculiar about his case and I questioned him. He admitted that he was just well of a chancre. He had pox, but not smallpox. The pustules on his face went through all the changes of those of smallpox and, after the scabs left his face, he was pitted exactly like a case of smallpox. Sometime later I was called to a cheap "flop house" on south El Paso street, which was patronized mostly by dope fiends. I found a large, dark dormitory filled with cots that rented for ten cents a night. Over in one corner lay a man on a cot and his face appeared pretty well filled with papules. I hesitated to send him to the eruptive hospital and finally I called in Dr. Klutz and we looked him over and decided to send him out. Next morning when I called at the hospital, I decided that this man did not have smallpox, but I had to confess that I was unable to make a diagnosis until the superintendent remarked that this was the lousiest hobo he had ever seen. Then I knew what ailed the man. Stupefied by opium, the lice literally swarmed over his body and bit his face in such numbers that they raised papules. The joke was too good to keep and I told it, at our next society meeting, much to the disgust of Doctor Klutz.

Smallpox has been mistaken for chickenpox, and vice versa, more than any other disease. This is especially true of the mild form of smallpox. Anders says, "There is nothing more difficult to differentiate between than a case of chicken-pox and a mild case of smallpox, in the pustular stage." There are three points of differentiation which, if followed closely, will always guide the diagnostician aright. The first two I regard as infallible: (1) The pustule of smallpox is multilocular and that of chickenpox is unilocular. If in doubt about the diagnosis, puncture the pustule with a sterile needle. If it is chickenpox, there will exude a drop of clear serum, the pustule will collapse and the covering will drop down flat. If it is smallpox, there will exude a drop of fluid, but the pustule continues to stand up "like a knot on a log. (2) The pustules of smallpox are always irregularly round in shape. On the contrary, many of the pustules of chicken-pox will be found elongated and will present other irregularities in shape. (3) Smallpox pustules are always most abundant on the face and hands and that portion of the body exposed to the air. Chicken-pox pustules are more abundant on the back and on that portion of the body covered by the clothing.

"Once in a blue moon" you will find a case of chicken-pox where the vesicle is filled with yellow pus instead of a clear fluid. Cases of this kind are very liable to be diagnosed as smallpox. The puncture test and the shape of the pustules will settle the diagnosis. I have never seen half a dozen cases of this kind. They are rare.

There is no specific treatment of smallpox. No case of the disease is ever shortened or rendered milder by any treatment. If the case is of the hemorrhagic type, there is but little hope. Ninety-eight per cent of them die. Over fifty per cent of these cases die before the disease is fully developed. Confluent cases vary in mortality from fifteen to thirty per cent. Discrete cases and varioloid cases are mild and they always get well, unless complications occur.

In the febrile stage, the disease is best treated as if it were influenza. I have tried all kinds of unguents and washes for the body, with little or no benefit. An antiseptic gargle of some kind is needed for the throat. A few drops of sterilized castor oil placed in the eyes is the best remedy for the sore eyes that always accompany this disease. A solution of carbolic acid in camphor water will sometimes greatly relieve the intolerable itching of the body. It is best used as a spray. Old people and drunkards need alcoholic stimulation. Pregnant women nearly always abort and die. Some claim that it is possible to have smallpox twice. I have never seen such a case and I am skeptical of the truth of such claims. Evidently a mistake in diagnosis was made somewhere along the line.

Eternal vaccination is the price we pay for protection from this terrible disease. When Jenner discovered vaccination he conferred a great favor on mankind. I have seen hundreds of cases of smallpox and I have yet to see a person die who was ever successfully vaccinated. Yet, there are to this good day misguided fools who persist in opposing vaccination. "Against ignorance and superstition, the gods themselves strive in vain."

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

TYPHOID IN TAOS

The epidemiology of typhoid fever in rural New Mexico is a science sui generis. Elsewhere the problem is to find the cause of an outbreak of typhoid fever. With us the problem is to weigh the several obvious causes and to try to decide which are more important and which less important. He who stops his inquiry when the first possible source of origin is perceived, has failed.

A nice example of this was provided recently by the villages of Ranchos de Taos and Llano in Taos County. Dr. C. H. Douthirt, state director of county health work, responding to a call for help from the first of these villages early in October, has spent many days investigating the outbreak and has put down some of his findings in the New Mexico Health Officer for November, 1933.* Four families were using water from polluted wells; fifty-one out of the sixty-two cases of typhoid fever admitted having drunk water from irrigation ditches. A superficial judgment would decide that the cases all or mostly came from polluted water. Unfortunately we do not know what proportion of the uninfected population in that district drink from irrigation ditches. But it may well be that five out of six healthy people would also admit having drunk from irrigation ditches. In that case the significance of such a history would disappear. Moreover, no B. coli were found in the ditch water. The ditches are thus not permanently polluted and the onset of the cases is too far spread for many of them to have arisen from a temporary pollution. Again, here is one ditch on which are two families with typhoid fever. Several families using the same ditch have had no typhoid fever. And, of the two families who suffered, those downstream were ill eleven days before those upstream. And so the evidence accumulates that, whereas some of the cases were due to water-borne infection, many others were not.

Many homes were filled with flies; windows were unscreened; privies usually wide open at the back and one or both sides. It could hap-

pen that some of the cases ate food infected by flies.

And undoubtedly many were due to contact with sick or convalescent patients.

Such outbreaks spring from a chronic carrier, are spread and kept in action by temporary carriers. To prevent and control them, it is necessary to detect the carriers. To do so the stools must be passed within twelve hours of reaching our laboratory. But stools cannot be sent from Taos to Albuquerque in twelve hours. Some day we shall have a mobile laboratory that will carry the bacteriologist with necessary equipment over the state. That day will see the beginning of real control of our rural typhoid fever.

*Copy will be forwarded gratis to any reader of these notes on request to the State Bureau of Public Health, P. O. Box 711, Santa Fe, New Mexico.

DISTRIBUTION OF ARSPHENAMINES

In November, 1933, we began the distribution of arsphenamines and other remedies for syphilis, purchased through a grant from the Federal Relief Administration. Physicians have made application through local relief committees for these drugs to be used in the treatment of indigent patients. On receipt of orders from local committees, the state bureau of public health has purchased the drugs and had them sent directly to the physician. The amount distributed from November, 1932, to November, 1933 (inclusive), is shown in the following table:

County	No. of doses	County	No. of doses
Bernalillo	580	Quay	199
Chaves	215	Rio Arriba	170
Colfax	78	Roosevelt	22
Curry	190	Sandoval	9
De Baca	91	San Miguel	176
Dona Ana	80	Santa Fe	267
Eddy	98	Taos	40
Guadalupe	60	Valencia	323
McKinley	70		
		Total	2,668

These 2,668 doses have cost the relief agencies $585.24, or at the rate of 22 cents per dose. Some fifty doctors have donated at least $5,000 worth of service. Would that it were possible to estimate how much this work has saved to the state of New Mexico in the prevention of the spread of infection, the restoration of earning capacity of the infected, and the avoidance of invalidity and untimely death!

Fourteen counties in the state have made no application for these drugs. It so happens that in one of these fourteen counties Doctor Walter Clarke of the American Social Hygiene Association has just completed a survey. His report has not yet been received. However, it is safe to say that in two weeks he uncovered enough untreated syphilis in this one county to require more than 2,668 doses in the course of thirteen months. Thus we have a measure not only of accomplishment, but also of what still remains to be accomplished.

THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST.

MINUTES OF THE NINETEENTH ANNUAL MEETING

El Paso, Dec. 7, 8 and 9, 1933.

The opening session was called to order, at 10.40 a. m., Thursday, Dec. 7, in the El Paso Club lounge room, tenth floor of the Hussmann Hotel, by Dr. F. D. Vickers, President.

Dr. J. A. Pickett, President of the El Paso County Medical Society, gave the welcome address, in substance as follows: The Association has been coming to El Paso off and on for nineteen years. Some faces usually seen here will be missed; the passing of some will be mourned; the unavoidable absence of others will be regretted. The local committees have worked diligently to prepare an enjoyable and profitable program; it is hoped that all in attendance will enjoy every minute of their stay and be glad to return.

Dr. R. D. Kennedy, of Globe, former president of the Assocation, gave the response on behalf of Arizona.

Dr. Frank Stovall, of Sherman, N. M., gave the response on behalf of New Mexco; he claimed to have practiced longer in New Mexico than any doctor now living in the state.

Dr. Crum Epler, of Pueblo, Colo., fraternal delegate from that state, brought greetings and invitation to the members to visit the Colorado State Medcal Association meeting.

After announcements regarding clinics, the meeting and other matters, the regular scientific program was taken up, beginning with the Symposium on Allergy.

The first paper was by Dr. Orville H. Brown, of Phoenix, on "Food Allergy." He stated that he had abstracted over 500 papers in preparing the paper as an introduction to the study on allergy. He urged the members to listen carefully to all the papers and get the different ideas about allergy. To illustrate the superficial regard which the average doctor has for allergy, he recalled a meeting as large

as this in which the question was asked as to how many there present used the preliminary test for allergy before giving tetanus antitoxin. Four said they did, and three of them are at this meeting. If a group of doctors, supposedly intelligent, will neglect such a simple and important matter as this it is certainly a timely subject. With this introduction, Dr. Brown summarized his paper, which will be published in full in this journal in the near future.

The discussion was opened by Dr. G. Werley of El Paso, continued by Drs. K. D. Lynch (El Paso), W. W. Waite (El Paso), L. O. Dutton (El Paso), H. A. Miller (Clovis), R. D. Kennedy (Globe), J. M. Meason (Chandler), Henry Stovall (Sherman), with Dr. Brown closing.

Following the morning session, the meeting adjourned for the Clinical Luncheon. At this luncheon, Major E. Raycroft, of the William Beaumont General Hospital, spoke on "Impressions of China." He stated that he has just returned from a three years term of service in China, and that his remarks were purely personal impressions and not official in any sense. He was glad to go and was glad to return. China is a country of great extremes, either up or down. Peking is 86 miles from the coast and only six feet above sea-level; in the interior some of the world's highest peaks are to be found. China has about four million square miles to three million in the United States; it has 400,000,000 people to our 125,000,000. People are packed into small villages with waste land between. It is a country of extreme poverty and fabulous wealth. Sixty-five per cent of the people are starving. Laborers exist on food which would cost one cent a day in this country. Some employers are very liberal and allow them two cents a day for food. Saw very few emaciated people; you do not see the starving ones. One prominent Chinese general, who resisted the invasion by the Japanese, had a private army of 750,000 men, 125 airplanes, and a munition plant valued at fifteen million dollars. The Japanese destroyed personal property belonging to him and valued at 135 million dollars gold. Besides this he had deposited in foreign banks, 42 million dollars gold, and in Chinese banks 95 million dollars gold. That is what he is known to have had. He got this by collecting taxes in advance,—in one known instance taxes were paid for the year 1982. A new government may wipe out all taxes and start over again. The Chinese soldier gets a half cent gold a day.

There are three types of physician in China: (1) the foreign physician; (2) the Chinese foreign trained physician; (3) the Chinese doctor. The foreign physicians are found in the three medical centers of Shanghai, Chengsu and Peking. The Chinese foreign trained physician does not relinquish his native practices. The native Chinese doctor follows a very primitive practice. There are about 500 mission hospitals in China, many doing excellent work; their greatest difficulty is lack of control over the Chinese patients. The idea that Chinese pay their doctors to keep them in health is a fable. The doctor does not see the high class woman patient. The great wall of China was described and the differences between Chinese and Mongolians described also. The plight of China is a powerful demonstration of a country without defense against aggression from without.

The afternoon session opened at 2:10 by Dr. Vickers. The first paper was by Dr. R. A. Wilson, of Tucson, on "Hay Fever."

Dr. F. F. Smith, of Raton, who had the next paper, could not be present and his paper was read by Dr. George Turner of El Paso, its title being changed to "Allergy Disease."

Dr. Turner opened the discussion on the two papers; it was continued by Drs. C. S. Kibler (Tucson), E. W. Phillips (Phoenix), Hilgartner (Austin, Texas), with Dr. Wilson closing.

Dr. C. S. Kibler, of Tucson, presented his paper on "Methods of Allergic Study." Discussion of this was opened by Dr. L. O. Dutton of El Paso, being continued by Drs. Leslie M. Smith (El Paso), and R. A. Wilson (Tucson), with Dr. Kibler closing.

The paper by Dr. Howell Randolph, of Phoenix, on "Insect Dust as a Cause of Hay Fever and Asthma" was read by title.

Dr. David M. Davis, of Phoenix, presented his paper on "Allergy in Relation to the Urogenital Tract."

Discussion was given by Dr. A. W. Multhauf, of El Paso; there was no closing discussion.

The paper by Dr. E. A. Gatterdam, of Phoenix, on "Allergy in Relation to Lesions of the Nose and Throat," was read by title, in the absence of the author.

Dr. J. E. Sherman, of El Paso, then presented his paper on "Allergy in Tuberculosis."

Discussion of this was given by Dr. Mott Rawlings, of El Paso, with no closing discussion.

Dr. J. B. Littlefield, of Tucson, gave his paper on "Reactions in Blood Transfusions."

Discussion of this was opened by Dr. Victor Randolph of Phoenix; discussion was continued by Drs. C. S. Kibler (Tucson), Mott Rawlings (El Paso), W. W. Waite (El Paso), F. D. Vickers (Deming), with closing discussion by Dr. Littlefield.

The evening program of Thursday, Dec. 7, was in charge of the medical staff of William Beaumont Hospital. A supper was first served cafeteria style in the General Mess Hall to about 150 members and guests who gathered for this high light of the meeting. Following this, a Clinical Program was given in the Red Cross House, with Colonel Pipes presiding.

Dr. Pickett first introduced the president and president-elect of the Association, and expressed the thanks of all those present for the excellent dinner. Colonel Pipes expressed the pleasure of the staff at having the members of the Association and of the El Paso County Medical Society present; they are very happy in the cordial relationship existing between the hospital staff and the El Paso County Society, and it is a part of the training of their

medical officers to attend the society meetings. The Clinical Program consisted of four numbers:

1. A Foreign Body in the Mediastinum, presented by Major Governeur V. Emerson, M. C. It was presented because of the unusual nature and location of the foreign body. Patient was admitted by transfer on Oct. 16 for mental observation. Two days after admission he had a mental explosion and introduced a mechanical pencil through the suprasternal notch; the wound was first thought to be superficial and of no importance; later x-ray examination showed the pencil introduced out of sight into anterior mediastinum and it was decided to remove this foreign body. The cervical route was chosen, an incision being made parallel to the inner border of the sternomastoid muscle and into the mediastinum. The pencil was located and removed without undue difficulty though there was some encroachment on the superficial blood vessels, a large one being practically eroded through. Drainage by two Penrose tubes. He ran a stormy course from mediastinitis, with white count up to 19,000 and 82 per cent polynuclears. The wound gradually closed and finally healed. (X-ray films before and after removal were shown and patient demonstrated.)

Major Edward J. Stricker, M. C., discussed the case from the psychiatric standpoint. In addition to being a surgical peculiarity, the patient was an unusual mental problem. His psychosis was due to cerebro-spinal syphilis. We have been taught that negroes are not subject to involvement of the central nervous system with syphilis,—at least to any extent. In this area there is a high concentration of syphilitic risks. This patient was not known to have syphilis until picked up on furlough and hospitalized here. He is a typical case of central nervous system syphilis, with positive spinal fluid Wassermann and paretic gold curve. His mental state is a little peculiar, being more like that of dementia precox with delusions. His delusions caused the attempt at suicide. With regard to treatment, he would come under the head of cases treated by malaria, but his physical condition will not warrant this. He has been given the old standby of mercurial treatment.

2. Major Chas. L. Gandy, M. C., presented a case of diaphragmatic hernia. This condition until recently was thought to be rare; it is now being reported with increasing frequency. He described the types of hernia, the symptoms, diagnosis and treatment. The patient was a soldier, admitted 1:30 a.m., May 30, 1932, following an auto accident. He was in profound shock, pulse 160 and feeble, respirations 38 to 42, blood pressure 40/20. Pain in the back, extremities pale and cold, nausea and pain in the chest. Normal breath sounds on the right; on the left no sounds below the third interspace. Given shock treatment; reacted fairly well, the blood pressureby 4 a.m. being 84 55, and later 95/60. Pulse continued rapid. Symptoms continued to improve. X-ray showed fractures of transverse processes of second, third and fourth lumbar vertebrae. Chest x-ray taken on June 1st showed evidence of herniation of stomach into the left chest; later x-ray showed the splenic flexure also in the chest. He made a good clinical recovery from the fractured vertebrae. However, nausea continued with attacks of colicky pain in the upper left abdomen. Operation in the late fall was contemplated but a number of cases of influenza in the hospital caused this to be postponed. On Feb. 3 the phrenic nerve was paralyzed by alcohol injection, this method being chosen in preference to section or avulsion; following this the attacks of pain and nausea subsided. Almost a month later the final operation for the hernia was done. Approach was by the abdominal route. Defect which easily admitted the closed fist was found in the left leaf of diaphragm. Almost all of the stomach, the splenic flexure, almost one-third of the ileum and a portion of left lobe of liver were in the chest cavity. These abdominal viscera were not adherent in chest and were restored to their normal positions, and the defect in the diaphragm was repaired. Convalescence was uneventful. In the course of healing, expansion of the left lung occurred with some pleural friction and development of pleural fluid. This disappeared and by April 30 patient was discharged. He was checked in November and everything found normal. (Slides of x-ray examinations were shown and patient demonstrated.)

3. Major James P. Crawford, M. C, showed moving pictures taken by himself on a trip to Culion Leper Colony in the Philippines. He first read some general remarks on leprosy in these islands. There are 15,000 lepers in the Island of Culion. He described the method of making the examinations for leprosy, laying particular stress on the changes in pigment and the areas of anesthesia. Tissue is removed and the under surface of the skin is scraped for the bacilli. Nothing except leprosy will cause the characteristic areas of anesthesia. (The moving picture was very graphic, showing all stages and forms of leprosy, and the accompanying talk by Major Crawford was highly enjoyable.)

4. Major Henry C. Dooling, M. C., read a paper on acute atrophy of the liver and gave account of two cases observed. Typical acute atrophy of the liver is rare, even in large hospitals and two cases having occurred here within six months is considered of sufficient interest to report.

The first patient had been in the hospital twice before, the first time with gonorrhea and the second time with chancroids. He had three negative dark field examinations and two Wassermann reactions reported negative. Had received injections of tartar emetic but no salvarsan. Was returned to duty in Nov., 1932; present illness developed seven weeks later. On Jan. 7, he had chills, fever and general body aches, the transfer diagnosis being influenza. Temperature was 99.4 with slight jaundice of the sclerae; liver was palpable 3 cm. below the costal margin; no tenderness; spleen not palpable. Urine was negative. White count was 6000, with 59 per cent polys. Wassermann positive. Jaundice became deeper and on the 12th he began to vomit and this continued. On the 14th delirium developed and

he became maniacal, pounding his head against the wall and resisting attempt to hold him in bed. Was practically afebrile at this time Seven days after first examination, liver was not palpable, jaundice was marked and increasing; white count was 12,300, 64 per cent polys. On Jan. 15, temperature was 103.4, respirations rapid and pulse thready. Death that day. Autopsy showed bile stained tissues, subperitoneal hemorrhages, marked hemorrhage of omentum, bulk of liver greatly reduced, weight being 1150 grams, surface mottled, numerous superficial hemorrhages, gallbladder empty. Diagnosis: Acute yellow atrophy with syphilis secondary.

The second case came in six months later. He was 44 years old. Had secondary syphilis at a former admission. He had received eight injections of arsphenamine, completed five weeks prior to admission. On June 22, was re-admitted with digestive complain, distention in stomach and pain in upper right quadrant. Pain was worse two days prior to admission. Eyes yellow. Did not appear acutely ill. Was obese, weighing 205 pounds. Skin and sclerae were jaundiced. Had general adenopathy. Heart and lungs normal, tender over upper right quadrant, liver not palpable. Urine negative Absence of bile in stools. In the hospital three days; vomited on evening of third day and continued to vomit. Following night patient was found wandering about the ward, irrational, breathing rapidly, sweating, with weak pulse. He collapsed the following morning, went into coma and died. Autopsy findings were quite similar except the liver. Skin was icteric. Bile stained transudate in the peritoneum with hemorrhages. Liver weighed 2150 grams, being twice as large as the previous one. The lower border was below the costal margin, but with wrinkled appearance and mottling of the surface. The gallbladder had a small amount of colorless material. Diagnosis of acute liver atrophy with syphilis secondary.

The emphasis in these cases was laid on the evidence of syphilis.

Acute atrophy is characterized by a marked decrease in the size of the liver, acute and widespread necrosis of the liver cells, clinical jaundice and terminal stage with violent cerebral symptoms. It is not a terminal process of other forms of liver disease. It usually occurs in previously healthy livers. It is of toxic origin, but the toxin is not known. It is not bacterial. Syphilis seems to have a close connection. Ten per cent of the jaundice cases in secondary syphilis will go on to acute atrophy. Has followed alcoholic sprees and chloroform poisoning.

An interesting x-ray and pathological exhibit was on display, in charge of Major Williams and Major Crawford, consisting of the following:

X-RAY FILMS

SKULL

Sella—hypophyseal tumor.
Communicating accessory sinuses.
Macrocephalic skull.
Large frontal sinuses.
Fractures (two cases).
Ethmoid, injury of orbital wall.
Paget's Disease.

SPINE

Old fracture of cervical spine.
Dislocation of cervical spine.
Rudimentary vertebrae.
Old healed fracture of spine.
Sacralization, bilateral.
Epiphysitis.
Cervical ribs, bilateral.
Rudimentary ribs.
Lordosis, kyphosis, scoliosis.
Multiple fractures (scapula and ribs).

CHEST

Aneurysm.
Mediastinal tumor.
Carcinoma of bronchus.
Bronchiectasis (cylindrical).
Bronchiectasis (saculated).
Bronchiectasis (fusiform).
Carcinoma, bronchus.
Healed miliary tuberculosis.

BONES AND JOINTS

Bursitis (both shoulders).
Charcot joint.
Osteomyelitis of right tibia (specific).
Osteomyelitis of left femur.
Exostosis, multiple.

GASTRO-INTESTINAL SERIES

Duodenal ulcer (chronic).
Calcified mesenteric glands.
Diverticulosis.
Rupture (traumatic) left diaphragm.
Diverticulum of eosophagus.

GENITO-URINARY TRACT

Calculi, left kidney and ureter.
Polycystic kidney.
Calculi of bladder.
Calcified spleen.

FRACTURES

Fracture (scaphoid and styloid process) wrist.
Fracture and dislocation of wrists.
Resection of right elbow after fracture.
Fracture (compound comminuted).
Medial sesamoid (divided).
Medial sesamoid (divided).
Compound comminuted fracture.

MISCELLANEOUS

Fetus (abnormal position (microcephalic).
Breech presentation.
Abdominal aorta (calcification of).
Osgood-Schlatter's Disease.
Pneumo-peritoneum (accidental).

PATHOLOGICAL EXHIBIT

Leprosy bacilli.
Thick smear for malaria showing crescents.
Amoebic abscess of liver.
Primary carcinoma of lung.
Colon, chronic ulcerative type, final stage.
Tubercle bacilli, 20 days growth on potato media.

The morning session of Friday, Dec. 8, was called to order at 10 a. m. by President Vickers, for the Symposium on Tuberculosis.

The first paper was by Dr. Orville Egbert, of El Paso, on the subject "Is Our Present-day Knowl-

edge Adequate for the Control of Clinical Tuberculosis?" This was an excellent review of the present-day treatment of the disease, laying the foundation for more definite handling of various phases of the subject by the papers to follow.

The paper on Broncho-Moniliasis, by Drs. John W., Robt. S. and Zebud M. Flinn, of Prescott, was presented jointly by Drs. John W. and Robt. S. Flinn, each handling a definite phase of the subject.

The paper by Dr. W. Warner Watkins, of Phoenix, on "Chronic Inflammation in the Lung, with Special Reference to Silicosis," was then presented.

The discussion on these three papers was opened by Dr. W. W. Gay of El Paso; it was continued by Drs. J. E. Sherman (El Paso), C. W. Mills (Tucson), J. J. Beatty (Tucson), E. W. Phillips (Phoenix), Victor Randolph (Phoenix), R. A. Wilson (Tucson), F. D. Vickers (Deming); closing discussions were given by Drs. Egbert, John W. Flinn, Robt. S. Flinn and Watkins.

Upon adjournment, Clinical Luncheon was served in the Gold Room of the hotel, following which Dr. Martin B. Tinker, of Ithaca, N. Y., gave the luncheon address on "Tuberculosis of the Thyroid" following this by a lantern slide talk on "Malignancy of the Thyroid." Motion was made to extend to Dr. Tinker, a rising vote of thanks for his attendance at the meeting and for his splendid presentations to the program. This was carried and an intermission of fifteen minutes taken.

Following this, the program was resumed in the Gold Room, the session being called to order at 2:40 p. m. by Vice President David M. Davis, of Phoenix, who conducted the afternoon session.

In order to accommodate some patients who were to be demonstrated, the paper by Drs. John W., Robt. S. and Zebud M. Flinn, of Prescott, on "Heliotherapy in the Treatment of Tuberculosis of Bones and Joints" was called at this time. This was given jointly by Drs. John W. and Robt. S. Flinn, each handling a phase of the subject.

The discussion was opened by Dr. Frank Goodwin, of El Paso, who showed a number of patients surgically treated. Closing discussion was by Dr. John W. Flinn.

The group of papers on Childhood Tuberculosis was to have been introduced by Dr. Rosslyn Earp, Director of the Bureau of Public Health for the State of New Mexico, on "Childhood Tuberculosis as a Public Health Problem." Dr. Earp had been taken ill while enroute to the meeting and was unable to be present; his paper was read by title.

Dr. Chas F. Barley, of Tucson, gave his paper on "Childhood Tuberculosis; Etiology and Diagnosis."

Mr. M. K. Wylder, of Albuquerque, read his paper on "Childhood Tuberculosis, Discussed with Special Reference to Preventive Measures."

The opening discussion on these papers was by Dr. T. J. McCamant of El Paso, Dr. Mott Rawlings of El Paso and Dr. Harry Leigh of El Paso. Closing discussion was given by Dr. Barley.

The next paper was by Dr. E. W. Phillips, of Phoenix, on "Does Tonsillectomy Light Up Tuberculosis?"

Opening discussion on this paper was by Dr. Frank Schuster of El Paso, continued by Dr. D. M. Davis of Phoenix, with closing remarks by Dr. Phillips.

The final paper of this afternoon was by Dr. Chas. W. Mills of Tucson, on "Treatment of Pulmonary Cavities."

The discussion was opened by Dr. R. B. Homan of El Paso; it was continued by Dr. Victor Randolph (Phoenix), and closed by Dr. Mills.

President F. D. Vickers now resumed the chair and opened the general business session.

The secretary announced that four names were being proposed for membership: Dr. Chas. F. Barley of Tucson; Dr John Huffman of Tucson; Dr. Mott Rawlings of El Paso; and Dr. W. H. Livingston, of Santa Fe. These were all duly elected to membership.

The report of the Secretary-Treasurer was presented, as follows:

We have suffered a considerable loss in membership during the past year. We began the year with a membership of 225. We have not added any new members during the year, our Membership Committee having been wholly inactive.

We have lost ten members by death, 15 by resignation and ten have been dropped for being delinquent three years in dues. We have seventeen more who will be dropped on January first for delinquent dues of three years. This will make a net loss in members of 52. So many of our members have failed to pay current dues that we will have a membership of not more than 140 to 150 on January first.

This is a very serious condition, and does not call for extended discussion, but for prompt and effective treatment. When our dues were raised to $5.00 in 1930, several of our members thought this unwise and believed it would result in a dropping off in membership. Time has justified their foresight. However this is not the only reason for our gradual disintegration as an organization. It is, however, probably one cause. For this and other reasons, the following recommendations are made, without discussion of the several reasons, unless these should not be obvious to the members:

1. It is recommended that the dues for 1934 be reduced to $3 00, which was the original figure.

2. It is further recommended that a very responsible committee be constituted, possibly made up of the president, president-elect and Board of Trustees, whose function will be (a) to study the whole question of the place and program of the Association, (b) to revise our Constitution, (c) to interest the whole profession of the Southwest in the Association, (d) to present at the next annual meeting a plan of re-organization, which will include the type of programs to be given.

3. That careful thought be given by those who

have in mind nominating candidates for president-elect, to this work.

4. That, in view of the prime importance of the reorganization and the essential participation of El Paso in the plans, the next annual meeting be held in El Paso.

5. That the Board of Trustees, in their re-organization plans, be empowered to adjust or remit delinquent dues, wherever undue hardship or loss of valuable members will result should full payment be enforced.

The recommendation that the dues for 1934 be reduced to $3.00 was adopted by motion, duly seconded and carried, without dissent or discussion.

Item No. 2, in the secretary's report was put in the form of a resolution, with motion that it be adopted; this was also carried without discussion or dissent.

Motion that the matter of delinquent dues be referred to the Board of Trustees with power to act in accordance with their judgment in any individual case, was made, seconded and carried.

Dr. Homan made inquiry regarding the apparent duplication of subscriptions for Southwestern Medicine, when one of the state associations or the El Paso County Society remits for its members, and then the dues for the Medical and Surgical Association also carries subscription to the same journal.

The secretary explained that the subscriptions to the journal came from the state associations (Arizona and New Mexico) and from the El Paso County Medical Society. The appropriation from the Medical and Surgical Association was not for subscriptions but in payment for functioning as the publication medium of that organization, and somewhat in the nature of a subsidy to maintain the size and excellent quality of the journal.

The election of officers being declared in order, nominations for the office of president-elect were called for. Dr. R. B. Homan nominated Dr. J. J. Gorman of El Paso. Dr. Mott Rawlings of El Paso nominated Dr. David M. Davis of Phoenix. Balloting resulted in the election of Dr. Davis to this office.

For the office of first vice-president, Dr. Victor Randolph nominated Dr. Jas. J. Gorman of El Paso, who was elected by casting of unanimous ballot.

For the office of second vice-president, Dr. Chas. W. Mills of Tucson was nominated and elected by casting of unanimous ballot.

For the office of secretary-treasurer, the incumbent (Dr. W. Warner Watkins) was nominated and re-elected by casting of unanimous vote.

Regarding the place of the next meeting, the recommendation of the secretary was called to mind and El Paso was chosen for the 1934 meeting.

Adjournment.

The annual dinner exceeded all expectations with regard to attendance, there being close to two hundred members, guests and ladies present. A very excellent banquet served by the Hotel Hussmann was followed by entertainment, music and dancing. At the close of the dinner, the President-Elect, Dr. W. K. Gekler, of Albuquerque, gave the President's Address, dwelling on the economic situation of the physician. Dr. Gekler assumed the office of president at this time.

Dr. J. A. Pickett, president of the El Paso County Medical Society, served as Toastmaster.

The Saturday morning session opened at 10:20 a. m, with President W. A. Gekler in the chair. The two remaining papers from the Tuberculosis Symposium were presented:

Dr. Victor Randolph, of Phoenix, read his paper on "Intrapleural Pneumolysis, an Aid in Restoring Function to the Tuberculous Lung."

Dr. J. J. Beatty, of Tucson, read his paper on "How Experience in the Last Few Years Has Changed Our Attitude Toward Collapse Therapy."

The discussion on surgical treatment of tuberculosis was opened by Dr. F. P. Miller of Tucson; it was continued by Drs. E. W. Phillips (Phoenix), David M. Davis (Phoenix), W. W. Waite (El Paso), W. A. Gekler (Albuquerque), with Drs. Randolph and Beatty closing.

The Symposium on Thyroid Disease was now taken up, the first paper being by Dr. John Huffman, of Tucson, on "Physiology and Pathology of the Thyroid."

Dr. W. W. Waite, of El Paso, who was to open the discussion, stated that the subject had been so excellently covered and time was short, so he would not attempt further discussion.

Dr. S. C. Davis, of Tucson, read his paper on "Hypothyroidism." The chair announced that the discussion of this paper would be deferred until the other papers of the symposium had been presented, and they would then be discussed as a group.

Adjournment was taken to the Clinical Luncheon. After the luncheon, the report of the Committee on Necrology was called for and presented by Dr. S. D. Swope, of El Paso, chairman, as follows:

The committee on necrology begs leave to report that the following members have been removed from their earthly sphere of usefulness during the last year, by death:

Butler, Pierce M. ..... Winkelman, Arizona
Franklin, R. T. ..... Glendale, Arizona
Pruett, Frank A. ..... Phoenix, Arizona
Ramey, R. L. ..... El Paso, Texas
(Pres. First Scientific Meeting in 1914.)
Smith, H. M. ..... Las Vegas, New Mexico
Southworth, H. T. ..... Prescott, Arizona
Whitacre, H. E. ..... Tularosa, New Mexico
Wightman, L. E. ..... Globe, Arizona
Yellott, R. E. ..... Benson, Arizona
Harris, H. A. ..... Empalme, Son. Mexico

We hereby offer our sympathy to their various bereaved famlies and express the regret and sorrow for the loss of these valuable members of our association.

Committee on Resolution presented their expression of appreciation to the El Paso County Medical Society and the Ladies' Auxiliary, to the William Beaumont Hospital, to all the local committees, to the Hotel Hussmann and to the newspapers for

their generous publicity, and all who had helped to make this meeting an outstanding success. This was carried by enthusiastic vote.

The chair then called for the paper by Dr. Hal W. Rice, of Morenci, on "Indications for Surgical Treatment" (of thyroid disease). Following this paper, the meeting adjourned to reconvene at the regular meeting place at 2 p. m., to complete the scientific program.

In the final session, called to order at 2 p. m., the remaining papers of the Symposium on Thyroid were given, as follows:

Dr. J. L. Murphy, of El Paso, presented a paper on "What to Expect from Surgical Treatment."

Dr. John W. Cathcart, of El Paso, presented his paper on "X-ray and Radium Treatment of Exophthalmic Goitre."

Dr. G. Werley, of El Paso, presented a paper on "The Heart in Thyroid Disease."

Discussion of the whole group of papers in this symposium was opened by Dr. Paul Gallagher, of El Paso; it was continued by Drs. W. Warner Watkins (Phoenix), Martin B. Tinker (Ithaca, N. Y.), S. D. Swope (El Paso), F. D. Vickers (Deming), John Huffman (Tucson), W. A. Gekler (Albuquerque), G. Werley (El Paso). Closing discussions were given by Drs. Davis and Cathcart.

Adjournment sine die.

CLINICS BY THE EL PASO COUNTY MEDICAL SOCIETY

DECEMBER 8TH.

On Friday morning, at the Hotel Hussmann, the following Clinics were given by Dr. F. D. Garrett:

1. Traumatic Abdominal Cyst, with jaundice.
2. Tumor in the right abdomen,—question of origin.
3. Diaphragmatic hernia, involving cardia, with unusual symptoms.

Dr. Leslie Smith presented a number of patients with interesting skin lesions, with discussions of these, and clinical case reports.

At the Hotel Dieu, on Dec. 8th, the following, surgical clinics were held:

Prostatic resection by Dr. A. W. Multhauf.

Postoperative Cavernous sinus thrombosis, by Dr. Bloyce Britton.

Routine operations by Drs. W. L. Brown, Paul Gallagher and H. H. Varner.

At the Masonic Hospital, the following clinics were given:

Cardiospasm, presented by Dr. E. J. Cummins.

Massive multilocular cyst, operated by Dr. J. H. Gambrell.

Cesarian section, operated by Drs. J. H. Gambrell and Harry Leigh.

On Saturday morning, Dec. 9th, at the Hotel Hussmann, Dr. C. W. Awe gave a clinical discussion of undulant fever, with description of cases observed.

Dr. James Sherman gave a demonstration in hematology, with special reference to anemias.

At the City-County Hospital, the following surgical clinics were held:

Original Bone Block Operation for flail foot, by Dr. Frank Goodwin.

Umbilical Hernia, operated by Dr. J. H. Gambrell.

Rectal case with unusual features, by Dr. E. D. Strong.

Spinal injury, with neurological demonstration, by Dr. E. A. Duncan.

At the Providence Hospital, the following clinics were held:

Demonstration of fundus lesion wtih binocular ophthalmoscope; nose and throat pathology with demonstration; cataract extraction; glaucomatous iridectomy; all by Drs. S. A. and F. P. Schuster.

Resection of the presacral nerve for cord bladder, by Dr. K. D. Lynch.

Prostatectomy and resections, demonstrations, by Dr. K. D. Lynch.

SCIENTIFIC EXHIBITS

One of the most pleasing and significant features of this meeting was a small but very excellent scientific exhibit. This consisted chiefly of demonstration of interesting conditions by means of x-ray films, including the following:

El Paso Medical and Surgical Clinic: Gastro-intestinal conditions.

Frank C. Goodwin: Orthopedic conditions.

F. P. Miller: Thoracoplasty.

S. D. Swope: Series of films showing a developing lung abscess.

W. R. Jamieson: Urologic lesions.

A. W. Multhauf: Urologic lesions.

K. D. Lynch: Urologic lesions.

J. J. Gorman: Esophageal and stomach lesions.

Victor Randolph (Phoenix): Pneumothorax and Pneumolysis, unilateral and bilateral.

W. Warner Watkins (Phoenix): Non-Tuberculous Chronic Lung Lesions.

Drs. Cathcart, Mason and Dutton had a very pleasing exhibit showing the process of obtaining bacteriophages; the Eagle flocculation test for syphilis; the electrophoretic charge of bacteria.

Dr. W. R. Curtis exhibited foreign bodies from the bladder and sections of the prostate removed by transurethral route.

The following members and guests were registered:

Arizona:—N. V. Alessi (Douglas), C. V. Barley (Tucson), J. J. Beatty (Tucson), O. H. Brown (Phoenix), F. W. Butler (Safford), David M. Davis (Phoenix), S. C. Davis (Tucson), John W. Flinn (Prescott), Robt. Flinn (Prescott), W. A. Holt (Globe), J. W. Huffman (Tucson), F. A. Kennedy (Sacaton), R. D. Kennedy (Globe), Chas. S. Kibler (Tucson), J. B. Littlefield (Tucson), Jas. M. Meason (Chandler), Chas. W. Mills (Tucson), J. W. Morris (Safford), R. F. Palmer (Phoenix), E. W. Phillips (Phoenix), H. M. Purcell (Phoenix), Victor Randolph (Phoenix), Hal W. Rice (Morenci), W. W. Watkins (Phoenix), R. A. Wilson (Tucson).

New Mexico:—C. J. Amble (Mountainair), M. A. Cunningham (Deming), D. C. Daniel (Clayton), F. B. Evans (Alamogordo), N. D. Frazin (Silver

City), W. A. Gekler (Albuquerque), C. W. Gerber (Las Cruces), R. G. Hollis (Ft. Stanton), Wm. Howe (Las Vegas), W. H. Livingston (Santa Fe), C. A. Miller (Las Cruces), H. A. Miller (Clovis), J. G. Moir (Deming), J. A. Steel (Hatch), R. F. Stovall (Grant), G. E Tucker (Anthony), F. D. Vickers (Deming), J. J. Walker (Roswell), C. L. Womack (Artesia), M. K. Wylder (Albuquerque).

Western Texas (El Paso):—E. K. Armistead, C. D. Awe, F. O. Barrett, J. T. Bennett, Bloyce Britton, J. M. Britton, W. W. Britton, W. L. Brown, J. W. Cathcart, G. Causey, E. J. Cummins, W. R. Curtis, E. A. Duncan, L. O. Dutton, W. Ebell, O. Egbert, Major Franklin, Paul Gallagher, J. H. Gambrell, F. D. Garrett, S. J. Gatty, W. W. Gay, F. C. Goodwin, J. J. Gorman, Clay Gwinn, Major W. W. Hall, Ralph Homan, R. B. Homan, Jr., R. B. Homan, Sr., W. R. Jamieson, B. F. Jenness, N. H. Keller, Major Kelly, J. W. Laws, Harry Leigh, T. C. Liddell, A. D. Long, K. D. Lynch, C. H. Mason, T. J. McCamant, P. E. McChesney, F. P. Miller, J. E. Morrison, A. W. Multhauf, J. L. Murphy, J. A. Pickett, E. C. Prentiss, J. A. Rawlings, J. M. Rawlings, Major Raycroft, C. F. Rennick, E. W. Rheinheimer, Paul Rigney, Jacob Rogde, H. T. Safford, H. T. Safford, Jr., F. P. Schuster S. A. Schuster, J. E. Sherman, Leslie Smith, W. H. Stevenson, E. D. Strong, S. D. Swope, R. F. Thompson, Geo. Turner, S. T. Turner, H. H. Varner, S. G. Von Almen, W. W. Waite, G. Werley, Major Williams, J. H. Camp (Pecos), O. J. Bryan (Pecos).

Guests:—Martin B. Tinker, Ithaca, N. Y.; J. L. Jinkins, Galveston, Tex.; H. L. Hilgartner, Jr., Austin, Tex.; Crum Epler, Pueblo, Colo.; Walter Clarke, New York.

Mexico:—F. T. Hogeland, Cananea, Sonora.

BASIC SCIENCE IN ARIZONA

The history of the Basic Science Referendum campaign, which was won by a majority of some 800 votes, last October, is best given in the report of the Office Secretary to the Arizona Public Health League, Mrs. Kitty Ives Coleman. In substance this report is as follows:

II. Campaign Organization

A. The Arizona Public Health League: Organization consisted of A. C. Taylor, president; Edward Dorsey, secretary; Mrs. Maie Bartlett Heard, treasurer, and D. F. Harbridge, assistant secretary. This organization backed the campaign with their names appearing on all printed and advertising material, while form letters were signed by A. C. Taylor as president. The finances of the campaign were entirely under the control and supervision of this organization. Mr. Taylor and Mr. Dorsey signed all claims, with D. F. Harbridge issuing all checks. D. F. Harbridge also audited the accounts of the office secretary.

The Campaign Committee consisted of George C. Truman, M. D., chairman; J. D. Hamer, M. D. and Howell Randolph, M. D., members. The printing, advertising, and general campaign publicity work was directed by this committee. J. D. Hamer, M. D., served as secretary to this committee and attended to all office correspondence in addition to supervising detailed work of the campaign.

The Office Secretary prepared and submitted to Campaign Committee all materials for printing, advertising, radio addresses, etc. All mimeographing was done in the office in addition to general correspondence, etc.

Additional office help consisted of assistant typist for thirteen hours of work.

Parcel Post mailing was attended to by the A. C. Taylor Co.

The simplicity of the campaign organization greatly expedited the work of the office. The secretary of the campaign committee checked all work promptly, making it possible to clear all work daily. All committee meetings were held promptly.

III. Scope of Campaign.

The Organization and Individuals Contacted included:

1. County Medical Units. These societies were notified at the outset of the campaign that the Basic Science law was up for referendum vote, and a plan of action for county medical units suggested.

2. Medical Auxiliaries and Nurses Associations. These groups were also contacted and given plans for assisting in the campaign. Their chief work was to get the vote to the polls—this they did thoroughly.

3. Legislators. All legislators who supported the bill were written personal letters and asked for suggestions in conducting campaign. Valuable mailing lists were secured from this source—not political lists but names of individuals who would actually vote. Mr. Frank W. Bear, the legislative sponsor of the law, kept in daily touch with the office and gave freely of his time and advice.

4. Dr. Clarence Gunter—whose efforts in behalf of the Basic Science law extend over some ten years past—sent out 500 personal letters in addition to making visits to several counties of the state.

5. Parent Teacher and Women's Clubs. These organizations, through interested chairmen and heads, rather than as organized groups, gave invaluable help during the campaign. Publicity material was well distributed through these agencies.

6. Key Voters. Through mailing lists, as sent in by the five groups above, key voters in each county were contacted and sent material for distribution.

7. Druggists and Dentists. Mailing lists were secured from these groups, also, and other cooperation freely given.

B. Publicity Material Issued.

1. Publicity Pamphlets. These were six page pamphlets which outlined the Basic Science law, and presented its merits and intended service to the public in terms understandable to the lay mind.

2. Vote Yes 304 cards were distributed statewide for display in doctors' offices, drug stores, and such suitable places.

3. Other publicity matter consisted of cards printed in Spanish informing this class of voters as to the merits of the law; placards for display at polls were sent out state wide; small poll cards to be handed voters were issued; enclosure cards, mailed by doctors with their monthly statements were also printed—in some instances doctors preferred using the general publicity pamphlets for this purpose.

4. Form letters were especially prepared for the various types of key voters as obtained from mailing lists obtained from groups indicated in III-A above.

C. Advertising.

1. Radio Program. Station KTAR, Phoenix. This program began a week before election and consisted of: a. Forty word announcements urging "Vote Yes, 304," b. Two radio addresses of fifteen

minutes each given, respectively, on the two days preceding election. The first address was given by Mr. Frank W. Beer, legislative sponsor of the law. The second fifteen minutes broadcast consisted of to-the-point talks given by the Secretary of the Phoenix Chamber of Commerce; the President of the Arizona Bar Association; the State Chairman of Public Health for the Arizona Congress of Parents and Teachers. Mr. A. C. Taylor, as president of the Arizona Public Health League, presided at each broadcast as master of ceremonies.

2. Newspaper Advertising. Advertising space was carried in the representative newspapers of the state. The copy for all these ads was prepared and sent out from the campaign office in order that publicity material might be uniform throughout the state. In some instances local doctors signed the ads, while in others the officers of the Arizona Public Health League signed.

3. Editorial Support. Editorial support was excellent. The Arizona Republic, the state's leading daily, ran three editorials previous to election supporting the referendum, and another following election endorsing the action of the voters. Papers, state wide, were generous with their support.

IV. Obstacles in Way of Campaign.

A. Natural Elective Objection to Referendum and Initiative. Arizona has a natural objection to voting "yes" on any and all such legislation. The opposition counted on this fact in presenting the Basic Science Law as a referendum, hoping in this manner to kill the law.

B. Basic Science Principles Difficult to Explain to the Lay Mind. To the lay mind, the very word "basic science" is complicated and vague. More radio programs, reaching the voter by voice, would have aided in getting the public to understand the Basic Science law. A field worker, touring the state and contacting the voters, could also aid in clarifying such questions to the laity. This is costly.

C. Profession Not Alert to Need for Organized Effort.

1. Some counties failed to organize definite campaigns supporting the referendum. These counties, six in number, were lost. The eight counties having organized campaigns secured majority votes for the referendum.

2. The losing counties either counted on the larger counties to carry the referendum over, or were not especially interested in the outcome.

D. Work of Opposition.

Opposition knows no code of ethics. Publicity material, grossly misrepresenting the truth of the law was issued. The false statement that this law would cost the taxpayer "thousands of dollars" accounts for the vote the opposition was able to secure. These are exactly the right times to throw a "tax scare" into the public. The charge that the governor of the state signed the Basic Science law and vetoed the Naturopath act brought support for the "under dog." The flagrantly false charge that Mr. Beer as legislative sponsor, had received a huge sum for getting the law through the legislature and that he would receive a similar amount if the referendum were sustained, gained many votes for the opposition. This is ironical in that Mr. Beer is actually money out of pocket for his personal interest in behalf of the measure.

If the doctors had half the organized "trust" the opposition claim, such legislation would always carry by a huge majority.

V. County Vote on Referendum.

	304	305
Apache	151	248
Cochise	1214	1472
Coconino	341	265*
Gila	1067	864*
Graham	219	392
Greenlee	303	253*
Maricopa	5282	4323*
Mohave	264	456
Pima	2391	1708*
Pinal	683	575*
Santa Cruz	411	202*
Yavapai	851	1108
Yuma	463	433*
Totals	13,988	13,104

Majority for 304—884.

In the instance of each county carried (marked by *) the doctors conducted active campaigns and the majority votes secured in those counties may well be taken as a vote of confidence in the M. D.—*my doctor*.

Santa Cruz, a small county, had probably the best organized county unit resulting in a better than 2 to 1 vote of confdience in medical legislation. This county voted down the other referendum up for vote. Cochise, a mining county, worked hard but was unable to overcome the "tax cry" of the opposition.

A Follow-Through Campaign is necessary. Now that the Basic Science law has been sustained, it behooves friends of the measure to educate the public to the fact that a law as fair, unbiased, and economic in operation as claimed by its proponents, has been enacted. This is especially necessary in those counties failing to carry the referendum. The false charges made by the opposition need to be cleared if future public health legislation is to be possible. The opposition is even now attacking the constitutionality of the law. Friends of the Basic Science law must be constantly on the alert if it is to be given a "clean bill of health." Through some medium, monthly letters to all members of the state medical association, advising them as to the continuous work of the opposition and suggesting ways and means for keeping professional interest alert, should be sent out. This could be done at small cost. Santa Cruz county is holding a series of community programs, relative to public health, during the current year. Other counties might do well to address Dr. Chas. Smith, Nogales, Arizona, and learn the particulars of the Santa Cruz health programs.

For the information of those who may have forgotten the provisions of this law, it is printed below:

The most interesting features of this law, so far as the medical profession is concerned, are,

(1) The requirements for registration of all practitioners now in the state. This gives the working basis for this "new deal" in medical practice in Arizona.

(2) The provision that the secretary of the State Board of Health shall be the proper authority to take cognizance of any violations of this Act, and making it mandatory on county attorneys and the attorney-general to prosecute violations of this law. This latter provision represents the teeth in this law and fixes a responsibility which has heretofore been very vague and indefinite.

Section 1. Basic Sciences Defined; Practicing Healing and Practice of Healing Defined. Wherever the term "Basic Sciences" is used in this act and not otherwise specifically defined, the same

(Continued on page 36)

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A HAPPY NEW YEAR

As we write "Volume XVIII," and turn our thoughts to the New Year, we feel that there are good reasons not only to wish for, but to expect, a "Happy New Year." The Southwest cannot be said to be prosperous, but neither are we destitute. We entered the year 1933 with fear and trembling. We emerged from it with courage and confidence. Surely that is not all a state of mind. During the last six months of 1933 there was a definite trend upward in our economic condition; this more assuring in that it did not come with a sudden spurt but was gradual, and, like the optical illusion sometimes experienced in driving an auto up a long grade, we had to look backward in order to be certain that we were climbing. We are still on that economic grade, and are assured by our national leaders that at the top there will be a plateau of security and not a sudden drop into another depression. We are not even as fortunate as Will Rogers and cannot say that we "know what we read in the papers;" certainly there is much about our economic situation written about in the papers which we do not understand. We do believe, however, that never since the World War have our national leaders been so unselfishly determined to solve the country's problems and solve them on the basis of the greatest good for the greatest number. In such a situation, we can only have confidence that these solutions will be found and lend every effort to that much desired end.

THE SOUTHWESTERN ASSOCIATION

In this issue appears a full account of the annual meeting of the Medical & Surgical Association of the Southwest, which met in El Paso, last month. Among the notable accomplishments of that meeting was the inauguration of plans looking to the enlargement and improvement of this important medical organization. This duty was entrusted to the president, president-elect and three trustees, who will function as a Committee on Re-organization. The committee will, therefore, consist of Drs. W. A. Gekler, David M. Dairs, E. Payne Palmer, F. D. Vickers and W. R. Jamieson.

Without attempting to forecast what will be done or to prejudice their activities, but simply to help prepare the way for them, a brief review of the origin and activities of the Association during the past twenty years will be helpful. Prior to 1913, there existed a Southwestern Railway Surgeons' Association, meeting usually in El Paso and composed chiefly, if not entirely, of physicians serving as local and district surgeons of the several railways traversing this territory. In order to enlarge its scope, this was re-organized in 1913 into the Medical & Surgical Association of the Southwest, which opened its membership to all members in good standing of the county and state medical societies of Arizona, New Mexico, western Texas and northern Mexico. We would digress at this point to make amends for an unintentional oversight. In the recent

program of this Association's meeting in El Paso, there was an historical summary which omitted to state that Dr. C. P. Brown of El Paso was its first secretary. It was due chiefly to the untiring efforts of Dr. Brown that the Association was able to weather the first two or three precarious years of its existence.

The organizers of the Association had in mind, as its fundamental purposes, (1) the development of medical and surgical practice in the Southwest to the highest possible degree of efficiency; (2) the demonstration of this work, through scientific meetings and clinics, to the end that medical men of the Southwest might become convinced of the self-sufficiency and self-efficiency of the profession. One of the original purposes was to make El Paso a medical center which need not be ashamed to hold up its head in any company. Medical men from Phoenix, Tucson and Albuquerque, in their annual pilgrimages to El Paso, became fired with the ambition to make their cities as good in medical facilities and as efficient in medical service. Thus a healthy competition sprung up which has been highly stimulating throughout the Southwest.

At times, the Southwestern meeting has departed from the original idea of presenting an annual pageant of its own accomplishments in contradistinction to what has been done elsewhere, and have invited eminent specialists to visit us and tell us about the more elaborate accomplishments of other medical centers. One of the main problems of this Committee will be to offer a definite policy along which the Association may develop in the future. Shall the Association return to its original purpose and develop its medical autonomy? In our annual meetings, will we benefit more by bringing in eminent authorities in medicine to instruct us in various lines of achievement? Can we build our meetings on our own accomplishments and set over against this a judicious amount of work done elsewhere, for the sake of stimulating comparison? These are some of the important things to be considered by the Committee.

An intensive membership drive will also be conducted by this committee with the goal set at not fewer than 250 new members. To lend encouragement to this, the dues in the Association for the year 1934 were set at three dollars.

SAMUEL M. PARRISH

The death of Dr. Samuel M. Parrish, of Raton, N. M., closed the earthly career of one of the highly esteemed practitioners of New Mexico. He died on December 14, 1933, from pulmonary tuberculosis. Dr. Parrish was born in Missouri, Sept. 16, 1882. He took his medical degree at St. Louis University, in 1907, practicing at Smithton, Mo., and Fayette, Mo., until the World War in which he served. He was stationed at the Medical Officers Training Camp at Fort Riley, Kans. Subsequent to the war he located at Raton, N. M., where he practiced until his death. He was a member of the county and state medical organizations and will be greatly mourned by his confreres.

SANTA CRUZ MEDICAL SOCIETY

Occasionally a county medical society comes to life and begins to function with such an astonishing efficiency that its achievements deserve to be broadcast. Such a society is to be found in Santa Cruz County, Arizona. This society has ten members, but if any other society, large or small, in the Southwest can match them for originality of program, for coordinated activity, or for practical achievements, we would like to hear of it.

When the referendum was invoked against the Basic Science Law, as noted elsewhere in the report of the Arizona Health League, this county organized and took their story to the public with the result that the vote in that county was more than two to one in favor of the Law. They have not stopped here. They are continuing an active campaign of education of the public by public health meetings. The one held in December was addressed by Dr. N. C. Bledsoe, President of the Arizona State Medical Association, and Dr. L. Cody Marsh, a psychiatrist of note who has recently located in Tucson. This is bound to result in a better understanding of hygiene on the part of the public and will have the desirable incidental effect of thoroughly establishing in the minds of the citizens of that community the fact that the members of the county medical society are the authorities in matters of health and sick-

ness. This is a far better defense against quackery than legislation will ever become.

The officers of the Santa Cruz County Society for the year 1934 are as follows: Chas. S. Smith, President; J. H. Woodard, Vice-President; A. L. Gustetter, Secretary; G. L. Harker, Treasurer; the other members are T. B. Fitts, F. T. Hogeland, T. G. Reynolds, J. S. Gonzalez, E. E. Gloor, E. C. Houle.

They are now working out a plan for associate membership for the physicians of Nogales, Sonora, Mexico.

EL PASO COUNTY MEDICAL SOCIETY

The annual meeting of the El Paso County Medical Society was held at the Hotel Hussmann, on September 11th, at which meeting the following officers were elected:

President, Dr. E. W. Rheinheimer.

Vice-President, Dr. Ralph Homan.

Secretary-Treasurer, Dr. Leslie M. Smith.

Delegates to the Texas State Medical Association, Drs. T. J. McCamant and R. B. Homan; Alternates, Drs. F. P. Miller and George Turner.

Librarian, Dr. T. J. McCamant.

Associate Editor for Southwestern Medicine, Dr. W. R. Jamieson.

Delegate to the American Association for the Advancement of Science, Dr. E. C. Prentiss.

Board of Censors, Dr. Frank Barrett.

November 27, 1933

(Reported by Dr. Leslie M. Smith, Secretary.)

Report of 500 Cases of Hemorrhoids: E. D. Strong, M. D.

Smallpox: I. J. Bush, M. D.

Case for Dagnosis: W. W. Britton, M. D.

Report of Committee for Meeting of Medical and Surgical Association of the Southwest.

The El Paso County Medical Society met at Hotel Hussmann at 8 p. m., November 27, 1933, Dr. J. A. Pickett presiding. The minutes of the previous meeting were read and approved.

Dr. E. D. Strong read a report of 500 hemorrhoid cases treated with injections of 5 per cent phenol in oil. He reported good results

Dr. I. J. Bush read a paper on smallpox, relating its history, his experiences, and an excellent description of the disease. This paper will be published in full elsewhere. The paper was discussed by Drs. T. J. McCamant, E. C. Prentiss, Leslie Smith, E. D. Strong, J. W. Tappan, Ralph Homan, Chas. Rennick, Major Crawford, Colonel Pipes, and Major Kelly.

Dr. W. W. Britton reported a case for diagnosis. There was a consolidation in the middle lobes with the apices almost clear. The prevailing opinions were that it was either tuberculosis or Hodgkin's disease. Discussion by Major Emerson, Drs. Ralph Homan, Mott Rawlings, F. P. Miller, Chester Awe, George Turner, Major Franklin, Drs. J. W. Cathcart, J. W. Laws, and W. W. Waite.

The application of Dr. S. J. Gaddy for membership was read and referred to the board of censors.

The secretary read a letter from the Securities Service Corporation inviting the Medical and Surgical Association of the Southwest to a luncheon during the convention, at which time a Mr. Pick would talk on investments. Dr. W. W. Waite stated that the program was already full and that we could not take advantage of this offer. The secretary was instructed to so inform the Securities Service Corporation.

Dr. McCamant stated that he had moved the medical library to the basement of the Health Department Building and would need about $50.00 to get the library room in shape. The society voted to allow Dr. McCamant $50.00 for this purpose.

Brief reports were heard from the various committees appointed for the coming meeting of the Medical and Surgical Association of the Southwest.

There being no further business the meeting adjourned at 10:10 p. m.

AUTO ACCIDENTS AND ALCOHOL

The United States Bureau of Public Roads has not found that excessive speed is the greatest cause of accidents. In a research carried out by checking the speed of 41,000 automobiles, the average speed was found to be 35.5 miles per hour. Only one per cent travelled over 55 miles an hour; 12 per cent between 45 and 55; 43 per cent between 35 and 45; and 36 per cent between 25 and 35 miles per hour.

Drinking of alcoholic beverages interferes with driving ability in four different ways, according to Dr. Walter R. Miles, of Yale University. Although alcohol is generally thought of as a stimulant and gives a feeling of stimulation to the person drinking it, its real effect is depressing on the functions of the body. The driver who has been drinking gives a poorer grade of attention to what is going on

around him, including other traffic and traffic signals. His eyes, hands and feet are slower to respond. His muscular responses are less dependable. But he has an increased self-assurance which prompts him to assume the right of way and be willing to take chances. It is the belief of informed traffic officials that one-third of highway traffic accidents are chargeable to the use of alcohol by the driver.

According to an investigation made by the Maria Hospital in Stockholm, and published in Acta Chirurgica Scandinavica, 44 per cent of men injured in automobile accidents had alcohol in the blood, which means that they had been drinking within a few hours before the accident occurred. The investigation indicated that accidents are likely to occur in the very early stages of intoxication, that is, after the drinking of what usually is called a "moderate amount."

These investigations in two widely separated countries indicate that alcoholism is the same wherever it occurs; that alcohol is a narcotic poison from the time the first drop enters the stomach and begins then to depress the higher intellectual centers, and continues this effect until it is destroyed or eliminated.

SLEEPING SICKNESS

The recent epidemic of so-called "sleeping sickness" in St. Louis aroused great interest, both in medical circles and among interested citizens generally. This term has come into use because of the drowsiness which accompanies some forms of the disease. It must not be confused with African sleeping sickness, a specific disease due to a flagellated parasite, trypanosoma gambiense,—transmitted by the bite of the tsetse fly.

Lethargic encephalitis, to which the term "sleeping sickness" has been applied, is an acute infectious disease of unknown origin, the toxins of which cause diffuse, degenerative, disseminated inflammatory changes in the central nervous system. Four outstanding clinical types have been described:

The lethargic or ophthalmoplegic type which sets in after a prodromal period of fever and meningeal irritation. The neck is stiff and there is a mild pharyngitis. Drowsiness appears. The external and internal eye muscles become paralyzed as manifest by the appearance of diplopia and ptosis.

The Parkinsonian type which begins like an attack of influenza and suddenly paralytic symptoms appear which resemble paralysis agitans (shaking palsy or Parkinson's disease). The face is expressionless. The eyes exhibit a reptilian stare. The trunk and limbs are rigid. The voice is monotonous. Micrographia. Tendency to propulsion and festination. Tremor is, however, usually absent. In this type scopolamine, stramonium and atropin are usually effective.

The hyperkinetic type in which the primary stage of fever and excitement is followed by severe symptoms of motor excitation; either choreiform or myoclonic muscular contractions especially of the abdomen. This is bilateral.

The psychotic type which is characterized by memory defects. Disorientation as to time, place and person. Active delirium may alternate with stupor. Persistent emotional disturbance.

The epidemic which centered in St. Louis did not follow any of these types, and has been designated "Encephalitis B." The disease appeared suddenly with high fever (which lasted about a week and then declined), headache, occasionally double vision, occasional lethargy but also tremors and convulsions. Lumbar puncture showed a clear spinal fluid under increased pressure, high pleocytosis, increase in globulin and sugar. The blood showed leukocytosis (15,000 to 20,000) with excess of polynuclears.

ARIZONA AND NEW MEXICO IN THE LEAD

Restrain the cheering. We lead in the death rate from tuberculosis. Below in tabulated form will be found the death rates per 100,000 of population for the United States (registration area), Arizona and New Mexico, for the years 1929, 1930, 1931 and 1932.

Naturally and justly we claim that most of these are people from the east who come out here and inconsiderately die before we can send them home. But they represent a great problem, which is diminishing slightly as people learn that climate is valueless unless it is

backed up by a healthy appetite, a contented soul and an adequate pocket-book. It is the lack of these which runs up the figures in Arizona and New Mexico.

Death Rates per 100,000

	1929	1930	1931	1932
United States	76.0	71.5	62.8	63.0
Arizona	365.1	329.0	291.2	264.3
New Mexico	203.5	187.5	150.5	142.7

SOUTHWESTERN SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS.

The Southwestern Sectional meeting of the American College of Surgeons will include New Mexico, Arizona, western Texas (El Paso County), and northern old Mexico. It will hold an unusually attractive meeting in Phoenix, on March 16 and 17, with the honor and pleasure of having both the President of the College, Dr. William D. Haggard, and the President-Elect, Dr. William B. Greenough, at this conference.

The headquarters will be at the Westward Ho, where scientific papers and conferences will be held. The papers and addresses will be given by eminent visiting surgeons and Fellows of the College of the Southwest. Among the visiting surgeons who will participate in this sectional conference are the following:

Dr. Franklin H. Martin, Director-General of the College.

Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University, President of the College.

Dr. William B. Greenough, Consulting Surgeon Massachusetts General Hospital, President-Elect of the College.

Dr. Thomas M. Joyce, University of Oregon Medical School.

Dr. Charles A. Dukes, Oakland, Calif.

Dr. Allan B. Kanavel, Professor of Surgery, Northwestern University Medical School.

Dr. Malcolm T. MacEachern, Associate Director, American College of Surgeons.

Complete program of the Conference will be given in this journal next month (February).

THE NEW FOOD AND DRUGS BILL.

A bill which will come before the new Congress, very soon after it convenes, is of vital interest to the medical profession. This is the revised Food and Drugs Bill. The old Pure Food and Drugs Act, which has been in force since 1906, has been very valuable, but is so full of defects that revision is essential. Its most fatal defect was that it did not cover advertising, except that appearing on the label. The result of this was that the labels on patented medicines have been within the law, but the same nostrums have blatantly advertised their false and misleading statements in newspapers, magazines and over the radio. Extracts from a recent article by R. G. Tugwell, Assistant Secretary of Agriculture, appearing in Editor and Publisher, show the defects in the old law and the absolute necessity for revising it:

Reputable publishers and broadcasters do not want to disseminate fraudulent or misleading advertising. They realize that in the long run their interests are identical to the interests of consumers.

In the field of foods, drugs, and cosmetics, unfortunately, broadcasters and publishers do not have facilities for determining accurately whether or not a product is truthfully represented in advertising copy. True, some publishing firms have formed their own reviewing committees, and others submit medical advertising to competent advisers for comment. But on the whole the public can hardly expect every newspaper and radio station in the United States to maintain costly laboratories for testing advertised products; new patent medicines, for example, come and go with astonishing rapidity and there are now literally thousands of them on the market. No matter how well-intentioned publishers may be, therefore, there is placed before the public a great deal of advertising that deceives consumers, much to the detriment of public health.

The depression has had a serious effect on advertising standards. As revenues to advertising media declined, and as advertising agencies received smaller and smaller budgets from manufacturers, some of the agencies took on more questionable accounts, poured more and more ballyhoo into their copy, and the advertising media began decreasing their standards, a little at a time. Large publishing houses that had done a great deal to improve the character of national advertising, that had turned down accounts running into hundreds of thousands of dollars annually, began to stretch a point or two to admit advertising filled with questionable innuendo. One of the crusaders for clean advertising found its revenues swelled by running a full-page advertisement which represented an ordinary mouth wash as a preventive for tuberculosis. So the depression reduced standards, and consumers suffered accordingly.

While national magazines, good metropolitan dailies, and radio networks carry many fraudulent and misleading advertisements, by far the most flagrant abuses are found in movie magazines, mail-order catalogues, educational and religious journals, cheap fiction or "pulp" magazines, small dail-

ies, country weeklies, and on small independent stations, as well as in direct mail advertising. This again is probably a matter of competition. Just why a "pulp" magazine should declare that a depilatory is *safe* to use when it is known that the depilatory contains a positively dangerous ingredient that sends users to hospitals, causes all hair to drop from the body, and sometimes leads to death, I do not know unless it is that the better advertising accounts have exhausted their funds before they reach this class of publication and it must, perforce, take what it can get. Apparently educational and religious journals find themselves in the same predicament. Many small-town newspapers salve their consciences for advertising perfectly worthless and often dangerous products by charging a higher advertising rate for this type of copy.

I wish it were possible for advertisers, agencies, publishers, and broadcasters themselves to clean up the advertising business in every nook and hamlet of the United States. Unfortunately, that is far too much to expect. The presses of this country turn out 40 million copies of newspapers every day; they print 120 million copies of magazines every month; 600 radio stations broadcast daily with smooth and persuasive voices, turning on sales appeal full tilt. How many millions of direct-mail circulars flood the mails every month no one knows. Those are some of the outlets. Advertising originates from some 5,000 manufacturers of medicinal preparations, 2,000 cosmetic manufacturers, and thousands of food manufacturers. That is only part of the picture. Retailers advertise, too. There are more than 60,000 drug stores alone in the United States, the proprietor of any one of which is likely to sit down a few moments before his local paper goes to press and dash off an intriguing advertisement for a new diabetes cure (there is no such thing), he has just placed on his shelves and which he will be glad to pass on to his customers at $12 a bottle.

Patently, no privately organized group can regulate this whole field and give anything approaching a high degree of consumer protection. Physical limitations alone are too great, to say nothing of the impossibility of private enterprise managing a system of control that is completely unbiased, scientific, uniform, and permanent. I am certain, however, that this very situation presents an opportunity for effective cooperation between industry and Government.

Any intelligent conception of modern governmental functions must embrace the idea of effective consumer protection. The scope of such protective action must be progressively enlarged as population and the complexity of our social and economic life increase. Thus the protection afforded by the Federal Food and Drugs Act when passed in 1906 is radically insufficient today. Since the Act was originally passed there have been many changes in the food and drug industries, while the cosmetic industry has grown like a mushroom. New narcotic and habit-forming drugs have appeared on the market. Totally new food constituents and important nutrition elements like the vitamins have been discovered.

The progress of science alone can invalidate a law. In the case of the Food and Drugs Act that is certainly true. Nevertheless, 27 years' enforcement of the law has done a great deal of good. Among other things it has corrected the labeling of thousands of food and drug commodities. More than 22,000 legal actions, taken under the law since 1906, have had a salutary effect upon manufacturers of foods and drugs and have pretty well convinced them that truthful labeling is the best policy.

Unfortunately, however, the 1906 law does not cover advertising, except that appearing on the label. As a result, false and misleading statements have merely moved from one place to another.

Take a copy of a newspaper and carefully compare the advertising claims for a drug product with the label of this same product. If you read "Vapo-Cresolene" advertising you will find that it is recommended for whooping cough, spasmodic croup, bronchial asthma, nasal colds, bronchitis, and other ailments. These same statements used to appear on the label. The government seized the product on the ground that it was labeled with false and misleading declarations. The company quickly revised its labels so as to make them unobjectionable, but the product is still advertised as heretofore and whooping cough sufferers continue to buy the product.

Compare the label and the newspaper advertising of Lydia E. Pinkham's compound. The label says, in part, modestly and innocuously enough, "Recommended as a vegetable compound in conditions *for which this preparation is adapted.*" The consumer is curious to know about those things for which the product is adapted. So that the newspaper advertising—which, remember, is not subject to the present Food and Drugs Act—boldly claims that the product has remedial properties for inflammation, leucorrhea, female weakness, nerve troubles, "pains in the side," run-down condition, and other disorders of the body—all of which, any physician knows, is so much tommy-rot.

Believing some of the advertising they hear by radio and read in publications, people today are using dangerous fat-reducers and are thereby impairing their health; they are using depilatories with dangerous drugs and are being sent to hospitals; they are using "safe" hair dyes only to get lead poisoning for their trouble and money; they are taking radium water and are breathing their last; they are trying to cure colitis with a common laxative sold at a fancy price; they are trying to treat stomach ulcers with worthless tablets, only to impair their health with excessive cathartics; they are stuffing themselves with worthless nostrums and if, in despite of the nostrum, they get well, they sit down and write testimonials for the manufacturers.

I saw recently an impressive exhibit which I wish I could place before every manufacturer of medicinal preparations and every consumer in the United States. In the center of the exhibit is a pint bottle of dark liquid which sells for $12. Surrounding the bottle is a medley of direct-mail leaflets which claim that the nostrum will cure diabetes. To the right is a bundle of letters—testimonials—written by persons who used the medicine and declared that they were cured. These testimonials are numbered. To the left is a batch of death certificates, grim evidence that no one can dispute. These are also numbered. If you will lean forward and compare each numbered testimonial with the correspondingly numbered death certificate, you will find that the name, address, and all descriptions are the same. Every one of the persons who wrote testimonials died—and the doctors in every case certified that the cause of death was diabetes.

This $12 product is not manufactured by a pharmaceutical company; many patent medicines are not. It is manufactured, advertised, and sold by a traveling shirt salesman who, failing to find enough people who wanted to send him to college, became more enterprising and built up a highly profitable business by preying on the misery and gullibility of diabetics.

This particular product is made from a weed called "horse-tail." Others are more scientific—they actually contain Epsom salts, sugar and water. In our so-called enlightened age, the number of these miraculous cures is appalling. Pick up any issue of a secondary magazine and you are almost sure to find one or more advertised. Diabetics

want to believe. This is particularly tragic now that science has given us insulin which will retard the effects of the disease and permit diabetics to live a normal span of life.

Consumers want to know, naturally enough, why the government permits worthless products like these to be sold. I wonder about that too. Consumers want to know why magazines will carry advertising which fraudulently claims a product will cure diabetes. Hundreds of reputable publishers, and I, are wondering about that also.

I know that most publishers and broadcasters are willing to sacrifice a few dollars—and often do—in the interest of public health. But what a hundred or even ten hundred publishers do will not solve the problem. At present a chiseling minority too often defeats the constructive efforts of the majority. Under these circumstances we need the centralizing power of the government which will enable the majority to do collectively what they cannot do individually.

The revised Food and Drugs bill before Congress will, when passed, give that protection. It places responsibility where responsibility belongs—on the shoulders of manufacturers or persons placing the advertising. It requires publishers and broadcasters to supply the names and addresses of those placing advertisements, but it does not hold them liable, further than this. Neither does the revised bill require, as so many have supposed, that the Department of Agriculture is to become a high-powered censor, requiring that all advertising copy be submitted in advance.

What, in the terms of the new bill, is false or misleading advertising? Here is the text of the bill itself:

Sec. 9 (a) An advertisement of a food, drug, or cosmetic shall be deemed to be false if in any particular it is untrue, or by ambiguity or inference creates a misleading impession regarding such food, drug, or cosmetic.

(b) An advertisement of a drug shall also be deemed to be false if it includes (1) the name of any disease for which the drug is not a specific cure, but is a palliative, and fails to state with equal prominence and in immediate connection with such name that the drug is not a cure for such disease; or (2) any representation, directly or by ambiguity or inference, concerning the effect of such drug which is contrary to the general agreement of medical opinion.

(c) To discourage the public advertisement for sale in interstate commerce of drugs for diseases wherein self-medication may be especially dangerous, or patently contrary to the interests of public health, any advertisement of a drug representing it directly or by ambiguity or inference to have any effect in the treatment of any of the following diseases shall be deemed to be false: Albuminuria, appendicitis, arteriosclerosis, blood poison, bone diseases, cancer, carbuncles, cholecystitis, diabetes, diphtheria, dropsy, erysipelas, gallstones, heart diseases, high blood pressure, mastoiditis, measles, meningitis, mumps, nephritis, otitis media, paralysis, pneumonia, poliomyelitis, prostate gland disorders, pyeltis, scarlet fever, sexual impotence, sinus infections, smallpox, tuberculosis, tumors, typhoid, uremia, venereal diseases, whooping cough, except that no advertisement shall be deemed to be false under this paragraph if it is disseminated to members of the medical and pharmacological professions only or appears in scientific periodicals; Provided, That whenever the Secretary, after notice and hearing, determines that an advance in medical science has made any type of self-medication safe as to any of the diseases enumerated above, he may by regulation authorize the advertisement of drugs having curative or therapeutic effect for such disease, subject to such conditions and restrictions as he may deem necessary in the interests of public health; Provided further, That whenever the Secretary, after notice and hearing, determines that self-medication for diseases other than those herein named may be especially dangerous, or patently contrary to the interests of public health, he is hereby authorized to promulgate regulations designating such other diseases as diseases within the meaning of this paragraph: Provided further, That this paragraph shall not be construed as indicating that self-medication for diseases other than those named herein or designated by regulations of the Secretary under the authority hereof is safe or efficacious.

A subsequent section, 17 (a) (3), prohibits the dissemination of any false advertisement by radio broadcast, United States Mails, or in interstate commerce for the purpose of inducing, directly or indirectly, the purchase of food, drugs, or cosmetics. Section 17 (a) (4) supplements the preceding one by prohibiting the dissemination of a false advertisement by *any means* for the purpose of *inducing*, directly or indirectly, the sale of food, drugs, or cosmetics in interstate commerce.

The punitive provisions initially make all persons violating these provisions of the Act guilty of a misdemeanor, but exempt from prosecution publishers, advertising agencies, and radio broadcasters if, on request of the Department of Agriculture, they furnish the names and post office addresses of persons who contracted for or caused the dissemination of the advertisements. Dealers, too, are under certain circumstances exempt from prosecution. The Department has authority to appeal to the District Courts to enjoin all media from continuing to carry objectionable advertising.

BASIC SCIENCE IN ARIZONA

(Continued from page 29)

shall be understood and construed to mean and include all matter pertaining to gross anatomy, physiology, pathology, chemistry, bacteriology and hygiene. Wherever the term "Practicing Healing" or "Practice of Healing" is used in this act, unless otherwise specifically defined, the same shall be understood and construed to mean and include any person not hereinafter excepted from the provisions of this act who shall in any manner, for any fee, gift, compensation or reward, or in expectation thereof engage in, or hold himself out to the public as being engaged in the practice of medicine or surgery, the practice of chiropractic, analysis, treatment, correction or cure of any disease, injury, defect, deformity, infirmity, ailment or affliction of human health or disease, or who shall for any fee, gift, compensation or reward, or in anticipation thereof, suggest, recommend, or prescribe any medicine, diet or any form of treatment, correction or cure therefor; also any person or persons not hereinafter excepted from the provisions of this act who, individually or collectively, maintain an office for the reception, examination, diagnosis or treatment of any person for any disease, injury, defect, deformity or infirmity of body or mind, or who attaches the title of doctor, physician, surgeon, specialist, M.D, M.B., D.C., D.O., N.D., or any other word, abbreviation or title to his name, indicating or designed to indicate that he is in the practice of healing.

Sec. 2. Board of Examiners in Basic Sciences. There is hereby created and established a board to consist of five members, citizens of the state of Arizona, to be known and designated as the state board of examiners in the basic sciences.

Sec. 3. Same; Members, Appointment, Terms of Office; Vacancies; Oath of Office. The board of re-

gents of the university of Arizona shall appoint from the professors, associate professors or assistant professors of the faculty of the university, five persons to serve as members of the board of examiners in the basic sciences. The first appointments shall be made as soon as may be practicable after this act shall take effect. The terms of office of the members first appointed shall begin when they are appointed and qualify and shall continue thereafter for the following periods: Two members until January 1st, 1934; two members until January 1st. 1936, and one member until January 1st, 1938. Upon the expiration of such terms and of all terms thereafter, the board of regents shall appoint, for a term of six years, a successor to the member whose term expires. Vacancies in said board shall be filled, for the balance of the unexpired term, by appointment by the board of regents within sixty days after such vacancies occur, and each member shall serve until his successor qualifies; each member of the board before entering upon the discharge of his duties shall take, subscribe and file with the secretary of state the oath of office prescribed by the constitution.

Sec. 4. Organization of Board; Duties. Within thirty days after the appointment of the members of the state board of examiners in the basic sciences, as provided in Section 3 of this article, they shall assemble and organize by the election from their members of a president, a vice-president, and a secretary-treasurer, each of whom shall serve for one year, or until their successors are elected and qualify. Said board shall have authority to prescribe such reasonable rules and regulations relative to the examination of applicants in the basic sciences as may be found necessary for the performance of its duties. As to any matter coming within its jurisdiction, the board in session may take such testimony as it may deem necessary in the exercise of its powers and the performance of its duties under the provisions of this act, and any member of said board shall have the power to administer oaths in the taking of such testimony. Three members of the board shall constitute a quorum for the transaction of business. Said board shall have a common seal which shall be kept by the secretary, whose duty it shall be to keep a record of all proceedings of the board, including the register of all applicants for examination therein, preserving the names, ages, addresses, educational qualifications, and the result of their examinations, which shall at all times be available for inspection by any parties in interest. Said board shall meet at the university of Arizona and there conduct examinations in the basic sciences four times each year, respectively on the third Tuesday in December, March, June and September, and may hold such other meetings at such times and places as the board may determine. Notice of such meetings shall be sent by registered mail to members of the board. Said board may appoint and fix the salaries of an assistant secretary and other necessary employees. Such employees shall hold their positions at the pleasure of the board. The compensation of each member of the board shall be ten dollars for each day actually spent in the performance of his duties, together with actual necessary expenses, payable out of the general fund of the University. Examinations shall be in the basic sciences.

Sec. 5. Examinations. Examinations will be written and consist of ten questions on each subject and be of such a nature as to constitute an adequate test as to whether the person so examined has such knowledge of the elementary principles of such basic science as is taught at the university of Arizona in one year's instruction of thirty-six weeks, or as is

THE HOMAN SANATORIUM

For the Treatment of Tuberculosis

EL PASO, TEXAS

A privately owned, thoroughly and modernly equipped, ethical institution of 110 rooms. Heliotherapy, pneumothorax, phrenic nerve and chest surgery, and all other modern methods of treatment.

Write for booklet giving rates and other information.

taught in one year's instruction of thirty-six weeks at any college or university accredited by the university of Arizona, or the equivalent thereof.

Sec. 6. Fees. Any person not hereinafter excepted from the provisions of this act desiring to practice healing in this state shall apply to the secretary of the state board of examiners in the basic sciences, on blank forms prepared and furnished by said board, to be examined in the basic sciences at the next examination therein following the making of such application and for a certificate of registration in the basic sciences, accompanying such application with a fee of twenty dollars and sufficient and satisfactory proof that the applicant is twenty-one years of age or over, is of good moral character and possesses an education equivalent to graduation from an accredited high school of this state; provided, that no applicant shall be required nor requested to disclose in such application the professional college or university he may have attended nor the branch or system of healing which he intends to pursue.

Sec. 7. Certificate of Registration. If in such examination the applicant attains a grade of seventy-five per cent in each subject he shall receive a certificate of registration in the basic sciences, signed by the president and secretary and sealed with the seal of said board. If he fails in one or two subjects only, he may be re-examined in the subject or subjects in which he failed at any examination within one year, without further application or examination fee, and upon attaining a grade of seventy-five per cent therein, he shall receive his certificate of registration in the basic sciences. If he fails in three or more of the subjects, he may make a new application for examination in all subjects and again pay the secretary-treasurer of said board the examination fee of twenty dollars.

Sec. 8. Certificate Without Examination. Any person, not hereinafter excepted from the provisions of this act, who was lawfully authorized to practice healing, as by this act defined, in this state on the date this act takes effect, and who was on that date regularly licensed or registered in the manner then by law provided, shall upon application as herein provided, receive from the state board of examiners in the basic sciences a certificate of registration in the basic sciences without examination therein; provided, however, that on or before January 1st, 1934, every such person shall apply to the secretary of said board for such certificate of registration, accompanying such application with sufficient and satisfactory evidence that he was, on the effective date of this act, lawfully authorized to practice healing or regularly licensed or registered according to law in the particular branch or system of healing by him pursued and specifying in said application the branch or system of healing pursued by the applicant, the school from which he graduated, if any, and the date of graduation from said school, together with a fee of three dollars. Such certificate of registration shall recite that registration is made solely as a person lawfully authorized to practice healing or licensed or registered according to law on the date this act takes effect, and that same was issued without examination in the basic sciences. Any person entitled to a certificate in the basic sciences without examination therein pursuant to the provisions of this section, who fails to apply for same in the manner herein provided shall not receive such certificate of registration except upon application for examination and actual examination in the basic sciences as herein-

THE LONG SANATORIUM
EL PASO, TEXAS.

Modernly equipped for the care and treatment of tuberculosis in all stages. Rates $15.00 per week and up. Nurses care and medical attention included. $10.00 per week for convalescents. Write for descriptive booklet.

A. D. Long, M. D.
Medical Director

Founded 1896 by Dr. Hubert Work

A modern, newly constructed Sanitarium for the scientific care and treatment of those nervously and mentally ill, the senile and drug addicts.

■

CRUM EPLER, M. D.
Superintendent

WOODCROFT HOSPITAL, PUEBLO, COLORADO

before provided; provided, however, said State Board of Examiners in the basic sciences shall after the first day of January, 1934, upon payment to it of a fee of twenty-five dollars issue a certificate of registration in the basic sciences without examination to any person who would have been entitled thereto pursuant to the provisions of this section upon applying therefor on or before the first day of January, 1934, and who makes application therefor in the manner herein provided and shows good cause why said application was not made on or before the first day of January, 1934.

Sec. 9. Disposal of Fees. The secretary-treasurer of the board of examiners in the basic sciences shall on or before the third Tuesday in December, March, June and September, transmit to the bursar of the university of Arizona a record of all expenditures of the board for the previous quarter, with all fees collected during such previous quarter, the same to be credited to the general fund of the University.

Sec. 10. Appeal from Board's Decision. Any applicant who has been denied examination by the board or feels aggrieved by the board's decision may within thirty days after such denial or notice of his failure to pass the examination appeal to the superior court of any county and such court shall on such appeal inquire into the cause of such denial or failure. If in the opinion of the court admission to the examination was refused or certificate withheld without just cause, the court may order the board to examine the applicant or to issue a certificate. Notice of an appeal from the denial by the board of the right to examination or of the failure to issue a certificate shall be served by leaving with the secretary of the board an attested copy thereof within thirty days after said board has notified the applicant of its refusal to examine him or his failure in the examination as the case may be. Hearings of such appeals shall proceed in accordance with such rules as the court may determine.

Sec. 11. Void Certificates; Cancellation. Any basic science certificate which is issued contrary to the provisions of this act shall be void. The certificate issued by the state board of examiners in the basic sciences shall be automatically revoked by the revocation of any license issued to such person to practice the healing art or any branch thereof.

Sec. 12. Recording of Certificates. Each certificate issued by the board of examiners in the basic sciences shall be recorded by the secretary of such board with the secretary of the state board of health.

Sec. 13. Practicing Without Certificate; Penalty. Any person who shall practice the healing art or any branch thereof without having obtained a valid certificate from the state board of examiners in basic sciences, except as otherwise authorized by section 19 of this act, shall be guilty of a misdemeanor, and shall be punished therefor by a fine not exceeding one hundred dollars or imprisonment in the county jail not more than three months, or by both such fine and imprisonment.

Sec. 14. Fraudulent Certificate; Penalty. Any person who shall obtain or attempt to obtain a basic science certificate by any dishonest or fraudulent means, or who shall forge, counterfeit or fraudulently alter any such certificate, shall be guilty of a misdemeanor and shall be punished therefor by a fine not exceeding one hundred dollars or imprisonment in the county jail not more than three months, or by both such fine and imprisonment.

Sec. 15. Obtaining License Without Certificate; Penalty. Any person who shall obtain or attempt to obtain a license to practice the healing art or any branch thereof from any board authorized to issue any such license, without presenting to said licensing board a valid certificate issued by the state board of examiners in the basic sciences, as by this

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act required, shall be guilty of a misdemeanor and shall be punished therefor by a fine not exceeding one hundred dollars or imprisonment in the county jail not more than three months, or by both such fine and imprisonment.

Sec. 16. Issuing Invalid Certificate; Penalty. Any person who knowingly issues or participates in the issuance of a license to practice the healing art or any branch thereof to any person who has not presented to the licensing board a valid certificate from the state board of examiners in the basic sciences, or to any person who has presented to such licensing board any such certificate obtained by dishonesty or fraud, or any forged or counterfeit certificate, shall be guilty of a misdemeanor and shall be punished therefor by a fine not exceeding one hundred dollars or by imprisonment in the county jail not more than three months, or by both such fine and imprisonment.

Sec. 17. Investigatoin; Duties of Officers. The secretary of the state board of health shall investigate any supposed violation of this act and report to the proper county attorney of the causes that in his judgment warrant prosecution. Every police officer, sheriff and peace officer shall investigate supposed violations of this act and apprehend and arrest all violators thereof. It shall be the duty of the attorney-general and of the several county attorneys to prosecute violations of this act, provided that this power shall not authorize any discrimination or preference to be made between nor among medical doctors, osteopaths, chiropractors, naturopaths, christian scientists or other persons regularly licensed to practice the healing arts in the state of Arizona.

Sec. 18. Callings Exempt. This act shall not be construed as applying to optometrists, dentists, midwives, or nurses, practicing within the limits of their respective callings; nor to affect the practice of their religious tenets by members of any church, provided they do not administer drugs or medicine nor perform surgical or physical operations nor assume the title of or hold themselves out to be physicians or surgeons. Nor shall any provision of this act be construed to prohibit the rendering of first aid by any person at the scene of an accident; provided further that the provisions of this act shall not be construed to affect and there is hereby exempted persons engaged in the operation of public or private laboratories doing pathological, clinical serological, chemistry, assaying, bio-chemistry and other kindred, incidental or usual sciences and research usually allied or carried on therewith.

Sec. 19. Limitation of Provisions. No provision of this act shall be construed as repealing any statutory provisions in force at the time of its passage with reference to the requirements governing the issuance of licenses to practice the healing art or any branch thereof, except as herein provided.

Sec. 20. Unconstitutionality. Should any section, paragraph, sentence, clause, or phrase of this act be declared unconstitutional or invalid for any reason, the remainder of said act shall not be affected thereby.

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THE MEDICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month): Volume 17, Number 2. (Chicago Number, September 1933); Octavo of 235 pages with 36 illustrations; Per Clinic Year, July, 1933 to May, 1934; Paper, $12.00, Cloth, $16.00 net; Philadelphia and London; W. B. Saunders Company, 1933.

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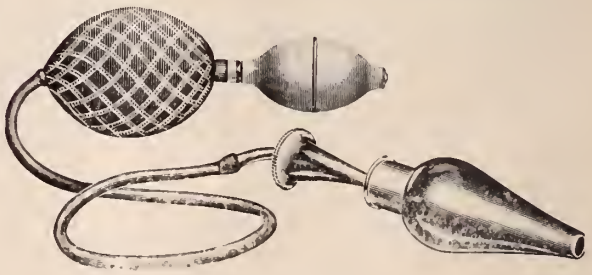

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The symposium on blood dyscrasias in this issue is worth the price of the book. The leukemic states, agranulocytosis, hemophilia, polycythemia and aplastic anemia are discussed in detail. In addition there are a number of other interesting papers.

The article on cinchophen poisoning is particularly timely; the concluding statement of this article is, "The frequency and abandon with which cinchophen, a dangerous drug, is employed in the manufacture of proprietary and other preparations should be a matter of great concern to the medical profession as it is a menace to the public."

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A cordial invitation is extended by the President and Board of Regents of the American College of Surgeons, the California State Executive Committee, and the Los Angeles Committee on Local Arrangements, to attend the California-Nevada Sectional Meeting of the College at Los Angeles on Tuesday and Wednesday, March 13 and 14, 1934. An excellent two-day program is being prepared, consisting of well arranged clinics in general surgery, and eye, ear, nose and throat surgery at the local hospitals; clinical addresses, and scientific sessions in which a number of distinguished leaders in surgery will participate, and a hospital conference for the discussion of medico-administrative and other problems of interest to the medical profession, hospital administrators, trustees, and others. The sessions will be brought to a close by a large Community Health Meeting at which the visiting speakers will talk to the people of the community on important health and hospital topics in the interests of scientific medicine.

This meeting will be of scientific value to every physician, as well as affording an opportunity of becoming more familiar with the Hospital Standardization Movement which has done so much for the practice of medicine in all its branches, and which should be furthered to the fullest extent. Hospital problems are now of greater interest to the medical profession than ever before.

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VOL. XVIII. FEBRUARY, 1934 No. 2

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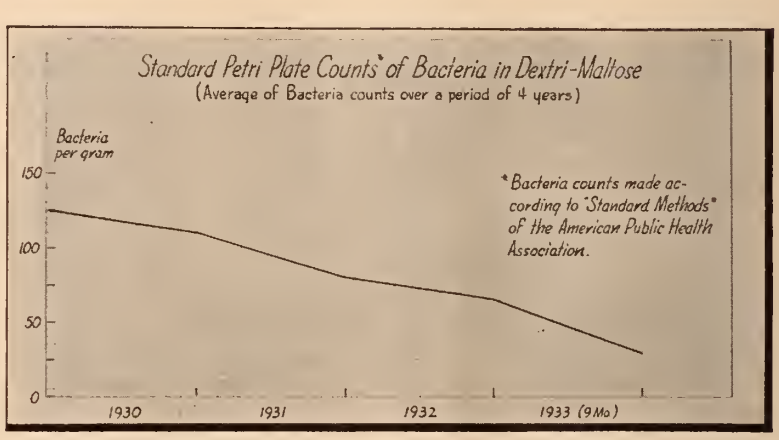

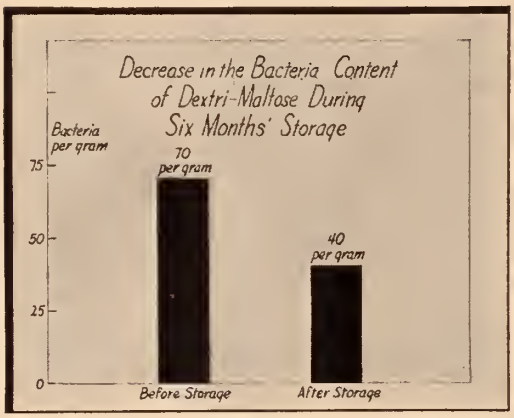

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METHODS OF ALLERGIC STUDY

CHARLES S. KIBLER, M.D., F.A.C.P.
Tucson, Arizona

(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

The diagnosis of the etiology of asthma presents one of the most difficult problems in medicine. Making an allergic study is not merely making skin tests. It is necessary to attack the problem with all the means at our disposal, not using one method of approach only, since no single method is consistently reliable.

It is generally agreed that atopy is quite frequently present even though it can be demonstrated neither by scratch nor intracutaneous tests. Milk, for example, may give no cutaneous reaction although the ingestion of milk is followed by a prompt attack of asthma or allergic rhinitis, and the patient may assure one that milk always causes that reaction. Such an example found recently may be cited. A man, with asthma for about one year, on whom an allergic study is being made, had no cutaneous reaction to milk by the scratch and intracutaneous tests. For reasons not important here, an elimination diet was not used, but a diet was prescribed which varied from his usual one only in that all milk products were eliminated. Not until twelve days later did any change occur. At this time, he became asthma free. On the sixteenth day, after having no symptoms for four days, milk was ordered again, and within thirty minutes after drinking one glass of it, a marked attack of asthma resulted, necessitating epinephrin. Another attack followed in six hours. With the discontinuance of milk, this patient has had no more asthma. This food was suspected because his asthma had been aggravated after taking it for one month. Milk had been taken previously only in meager quantities; that is, only as it was used in cooking.

Conversely, positive skin tests, either intracutaneous or scratch, do not necessarily mean a clinical sensitivity. It is absolutely unjustifiable to assume that a case is one of bacterial asthma just because the skin tests are negative to foods and inhalants. It is first necessary to prove that foods and inhalants are not factors by elimination-diet trials and a sojourn in an air-filtered room. Elimination diets were devised to diagnose the skin-insensitive case, and they have proved to be a very valuable adjunct to allergic study. In fact, no study is complete without their use.

Useful diets have been published by numerous allergists, Rowe[1] being the pioneer in this field. These diets are well balanced, containing the proper amounts of protein, starch, fat, vitamines, and minerals. They particularly eliminate wheat, eggs, milk, potatoes, and orange juice—probably the commonest allergens from a food standpoint. Usually several different diets are used. Frequently, it requires fourteen days to be freed from the effect of an ingested allergen. Cooperative patients can easily maintain, and even gain, weight on any of these diets. If a patient can be made free from asthma on one particular diet, then foods can be tried out, one at a time, and each food tested for clinical sensitization separately. However, elimination diets have the disadvantage of including foods which are not infrequently a source of trouble, and in cases of multiple sensitizations to foods, all of these diets may include foods to which the patient is sensitive. It is desirable in certain cases to give a simple food exclusively, such as chemically pure dextrin or glucose. White

dextrin has the advantage of being more palatable than dextrose. One quart of a 10 per cent solution of either contains approximately 400 calories, and two or three quarts daily can be taken with fair ease. This type of elimination diet is useful in order to obtain information as to whether or not foods are a factor in the persistence of allergic symptoms. Its disadvantage is that it can be used only for a short time. Dextrin, exclusively, is particularly useful in relieving an acute attack of asthma. Once relieved by this diet, foods can be tested clinically, one at a time. Many observers have pointed out the advantage of dextrose therapy in the relief of asthma. It is interesting to note that epinephrin increases blood sugar.

As a group, skin tests for foods are less reliable than tests for epidermal and pollen antigens. If skin tests for these latter groups of substances are negative, it is necessary to confirm this by another method, namely, the allergen-free room. The room and each article of furniture must be thoroughly washed, to eliminate molds in the house dust; the mattress must be made of long staple cotton, because cotton sensitizations are not common. The offending substance of cotton is very uncommonly the long white fiber of the cotton seed. The brown short fibers nearest the seed are usually the offending substances. Another method used is to equip the room with a rubber mattress, rubber sheets and pillows. This room must have an efficient air filter and maintain a low positive pressure continuously. If no improvement results from remaining in this room for one week, it is probable that an air-borne antigen is not responsible for the symptoms.

Repeatedly observers have found that pollens are responsible for asthma and allergic rhinitis in spite of negative skin tests. Ophthalmic tests are useful in this event. Many allergists in certain cases advocate protecting the patient with the prevailing pollens whether they react or not. It is frequently found that reactions are obtained in these instances, when a fairly large dose is reached. This method should always be used if symptoms are aggravated during the pollinating season.

No allergic study is complete without investigating the bacterial phase of allergy. Most allergists recognize allergy due to bacteria, although there is considerable disagreement as to the method of diagnosing this condition. Bacterial allergy is not very common in childhood. It is more frequent later in life and, also, as the duration of asthma increases. It can be said that bacterial allergy is usually a secondary rather than a primary sensitization. Frequently, patients with hay-fever or asthma begin by having symptoms from pollens. Later these pollen symptoms continue throughout the year, the patients having become sensitive to their own organisms or to foods as well.

I believe overlooking the possibility of bacterial sensitization is the most frequent cause of failure in the treatment of allergy. Because a person is sensitive to foods and inhalants, does not preclude the presence of bacterial sensitization, which may be the most important cause of symptoms. A bacterial study must be made in every case unless prompt and entire relief is obtained by other methods. Bacterial allergy should be suspected if asthma is aggravated by respiratory infections, if asthmatic and nasal symptoms are worse in the winter, if the sputum is more purulent than mucoid, and if there are accompanying symptoms of a nasal allergy. Skin tests with stock bacterial antigens were at first advocated and later rejected by the majority of allergists. Later, autogenous vaccines, without skin testing with the individual organisms, were made and given with variable success. Later, all the individual organisms were isolated and the patient was tested intracutaneously[2]. Benson's[3] method is to culture the nasal secretion, sputum, stool, or other sources of infection—as teeth, tonsils, or sinus discharge, using blood agar and brain broth, isolating the different organisms and making individual vaccines of washed bacteria, filtrates of brain broth, or cultures of both. Then, test the patient with his own organisms intracutaneously. A minute dose, .01 cc., is used. It is best to use a standardized 1 per cent suspension of bacteria or an equal amount of filtrate, for testing. A positive reaction is assumed if an area of redness and swelling results within 24 to 48 hours. This reaction must be at least 1 cm. in diameter. A prompt wheal reaction is disregarded as probably nonspecific in the majority of cases, although there are exceptions in a few cases.

A great deal of controversy has arisen as to whether the delayed reaction is a non-specific one. Certainly, not all cases give it. Those maintaining that this reaction is non-specific, contend that if the same bacteria that gave a positive reaction are given to a normal individual, a similar reaction will result. This contention has been found to be true to a certain extent. Usually the reactions that occur in a normal person are not so pronounced as in the patient whose organisms were used, and they do not occur consistently. Very frequently a small dose of this bacterial antigen will provoke a sharp attack of asthma in the patient from whom it was cultured. Also, administering it in gradually increasing doses often relieves the symptoms. This latter phenomenon is evidence for the specificity of autogenous bacterial antigens. Frequently treatment doses have to be reduced to one-thousandth of a cubic centimeter (.001 cc.) to avoid excessive reactions. It is interesting to observe that bacterial allergy appears to be quite different from atopy. The former usually produces no wheal and reagins are usually not demonstrated by the Prausnitz-Kustner or passive transfer reactions. True atopy produces blood-serum reagins and usually produces a wheal reaction on the skin.

In proceeding with an allergic study, a very carefully detailed history is most important, frequently giving valuable diagnostic information as to etiology. Particular attention is to be paid to the nose, looking for allergic rhinitis and especially polyps. Smears of sputum and nasal secretion must be made and stained with the routine blood stain to determine the percentage of eosinophiles. It is generally conceded that nasal polyps and abnormal percentages of nasal and sputum eosniophiles are pathognomonic of allergy. Abnormal amounts of blood eosinophiles are suggestive of allergy.

Sinusitis is usually a secondary infection and not a primary cause of allergic symptoms. An allergic nose is a fertile field for the development of a sinus infection. Relieving a cavity of blocked secretions can conceivably relieve allergic symptoms if bacteria to which the patient is sensitive are eliminated. Scratch tests of the skin are performed preliminary to intracutaneous tests, if the former have not previouly been given and found negative. This is done to avoid the danger of a general reaction from the injection of many antigens at one time.

The following is a good routine procedure for allergic study:

1. A very careful thorough history.
2. A complete general examination, including x-ray of the chest.
3. Examination of the nose and sinuses, including x-ray and transillumination as indicated.
4. Examination of blood, urine, stool, sputum, and nasal secretion. Other procedures as indicated.
5. Scratch tests for foods, epidermals, and pollens.
6. Intracutaneous tests for foods, epidermals, and pollens.
7. Bacterial study of sputum, stool, nasal secretion, and intracutaneous testing of the individual organinsms.
8. A week's stay in an allergen-free room.
9. A thorough trial of elimination diets.
10. Passive transfer tests on certain cases.

The results of the above procedure must be correlated with the history, and a plan of treatment can then be based upon all of the information gained. Often, it is advantageous first to desensitize to certain substances before other procedures are tried.

In conclusion, we may say that it is only by using all of the methods of allergic study which we now have at our disposal that we can obtain correct diagnoses of asthma and, consequently, a higher percentage of success in this, one of the most baffling problems of clinical medicine.

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1. Rowe, A. H., California & West. Med., Nov. 1928; J.A.M.A. 91:2, p. 1623, Nov. 1928; West. Hosp. and Nurses Rev. 13, March, 1929.
2. Thomas, W. S.; Famulener, L.W.; and Touart, M. D. Arch. Int. Med. 34:1, pp. 85-92, July, 1924.
3. Benson, R. L., Annals of Int. Med. 6:9, pp. 1136-51.

DISCUSSION

DR. L. O. DUTTON (El Paso): I wish to commend Dr. Kibler for making so clear the fact that an allergic study must be exhaustive and complete to insure success in uncovering the offending factors in asthma and allied conditions. His outline is complete and serves to indicate the exhaustive means necessary in some cases to arrive at a diagnosis as to offending factors.

I wish to take this opportunity to offer my discussion of all the papers presented on this subject.

In the treatment of hay-fever we prefer the preseasonal or perennial course, but very satisfactory results can be obtained by proper coseasonal desensitization.

Of sixty cases, forty-three were treated by coseasonal injections, with 100 per cent relief in twenty-five cases; ninety per cent relief in nine cases; eighty per cent relief in three cases; seventy-five per cent relief in three cases; fifty per cent relief in two cases; complete failure in one case. Seventeen cases were treated preseasonally with 100 per cent relief in fifteen cases, ninety per cent in one case and seventy-five per cent in one case.

Failure is most often due to improper dosage or to unrecognized secondary factors. The dose of extract necessary to desensitize varies within very wide limits and it is very necessary to avoid both under and over dosage.

Secondary factors are also important. In the sixty cases outlined above, there were twenty-two cases which failed to receive the maximum benefit until the secondary agents (foods and dusts) were recognized and eliminated.

In the control of asthma, our greatest stumbling block has been non-cooperation of the patient. Those who have faithfully carried out our directions have almost always eventually been relieved. The factors in asthma are so diverse that it frequently requires considerable time to arrive at a final diagnosis of the complete cause. We find it of value to spend considerable time in educating the patient as to the reasons for the various procedures employed.

The benefit to be derived from food-allergy studies in a variety of conditions is illustrated by ninety-five cases. There were sixty-three excellent results, nineteen fair results, and thirteen failures. The conditions occurring in the list were gastro-intestinal upsets, eczema, headache, angina pectoris, urticaria, colitis, acneform eruptions, arthritis, frequency of urination, stomatitis, sinus congestion, and nervousness.

We feel that many patients who could be greatly benefited are not given the opportunity to be adequately diagnosed from the standpoint of allergy.

DR. LESLIE M. SMITH (El Paso): While this essay was concerned more with the non-dermatological manifestations of allergy, it might not be out of place here to consider the different methods of allergic study in relation to the several groups of skin diseases with which allergy is more or less associated, and to demonstrate by lantern slides the clinical appearances of these conditions.

Urticaria and the allied neurovascular disturbance, angioneurotic edema, are well known to be frequently caused by food allergy. They are also caused occasionally by bacterial allergy. The method of study here is, of course, the scratch and intracutaneous tests. Not infrequently these tests will be negative. In these cases the conditions may be due to some physical agent or to some toxic product of disordered digestion rather than to a specific food allergen. Of the so-called eczematoid eruptions, few of them are found definitely due to the common allergens for which tests are usually made.

The condition known as neurodermatitis should not be considered an eczema. These cases are prone to develop in allergic children and are quite persistent. Some of them are found sensitive to foods and other allergens by the scratch or intradermal method. In my experience, however, there is usually also a nervous instability. I have repeatedly seen these cases flare up after worry or other emotional excitement; I have seen none entirely cured by removal of offending foods or other allergens.

The type of dermatitis which dermatologists today call eczema, is more likely to be associated with external irritants with which the patient comes in contact, such as dyes, various chemicals, furs, silk, wool, insecticides, and medicaments such as picric acid, as demonstrated on one of the slides shown. In these cases patch tests based on suspicion obtained from the history and with proper dilutions often yield valuable information. The condition known as infantile eczema is often due to specific food sensitizations.

SOME HAY-FEVER PROBLEMS IN THE SOUTHWEST

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(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

Our peculiar geographical and climatological situation in the southwest begets a problem in seasonal hay-fever that is more or less unique. Several factors enter into this: the marked variations in altitude, and therefore equally great variations in length and intensity of warm and cold seasons, in quantity of rainfall per annum, the directions, frequency and velocities of our winds, the types of soil—all tend to produce a flora that is somewhat distinctive of this geographical area. We may find some important pollen-bearing plant in abundance in and around El Paso, for example, and this particular plant may be of secondary importance or even absent in Tucson or Phoenix. All these, and other factors, tend to complicate the successful diagnosis and treatment of pollenosis in our communities, but the fundamental problems are the same here as elsewhere.

There is one problem that I shall mention in passing—it is mentioned only as an unsolved problem. I have not been able to find the answer in literature, but I shall attempt to show that it deserves serious consideration. Many of our localities are extremely arid, the atmosphere is dry and often very hot, the humidity is low; can or does this very dry air, per se, affect the nasal and bronchial mucous membranes of some patients, rendering them more likely to acquire a state of hypersensitivity than they would in a different cilmate? It is not infrequent to encounter a patient who has not the typical signs and symptoms of a hypersensitive disease, but who complains of a distress in the nose which has developed after coming to this climate, and which is characterized by a dry crusting, slightly pale, nonedematous mucous membrane, and is relieved by application of some bland oil or ointment. Is such a nose more apt to develop hay-fever than it would in a more humid region? I suspect that it is.

A further distinctive characteristic of this climate with reference to seasonal pollen disease is the well-known fact that the pollen, which is to be an important factor in the causation of this disease, must be wind-borne. Relatively we have few such plants, but those we have are profuse pollinators, and the paucity of rainfall, low humidity, and the relatively high temperatures of summer encourage this characteristic. This was very definitely and graphically shown by Marjorie Hopkins[1] in 1931 when she kept a close record in 103 cases of ragweed hay-fever, correlating the symptoms manifested by these patients with the temperature, humidity, and pollen counts, daily. It was noticed that the humidity curve was inversely proportional to the symptom curve and the pollen curve. The rainfall also tended to lower the pollen curve, and thus lowered the symptom curve. It was also noted that, when the temperature was high, the pollen curve and the symptom curve were usually high. She emphasized the fact that the variations in humidity and temperature were considered as affecting the symptoms of the patient, not directly, but through their influence on the pollen production. These observations are borne out in our own section. We have the high temperatures, the low humidity, and abundant pollen production therefore, an ideal condition for aggravating any already existing pollenosis and for producing grave symptoms in those patients who have the least degree of inherent hypersensitivity.

There is an idea prevalent among the laity, and often poorly understood by the profession, that the dust off the desert and unpaved streets, and our not infrequent windstorms that carry huge quantities of dust into the air, aggravate hay-fever symptoms; and that they are often the actual cause of the symptoms. It has long since been my personal opinion that the dust and sand-laden air which is inspired could act as a non-specific irritant to the respiratory mucous membranes and aggravate an already existing hay-fever, but by far the greatest irritant is the unseen pollen granules carried along with the dust and sand. Street dust, in and of itself, probably never caused hay-fever, but it could act as a nonspecific irritant to aggravate the damage done by pollen. It is so rare as to be almost unknown to have an exacerbation of seasonal hay-fever in winter, notwithstanding equal amounts of atmospheric dust in summer and winter. This fact makes the following case more difficult to explain. W. C., a known Bermuda-grass hay-fever patient, was in Central America. He had occasion to walk considerable distance through a lava bed. There was no apparent vegetation for miles around, lava covered the ground completely. Walking in this lava caused a fine white dust to fill the air. Breathing this precipitated a violent attack of hay-fever. Apparently there was no possible inhalant save the dust from the lava.

We have shown that we have more pollen in the air for longer periods of time than places with cooler and more humid climate; therefore, we have a greater exposure for longer consecutive periods. We have the drying effect on the mucous membranes, with its consequent sensitizing effect; we have the lesser important irritating factor of the dust and sand. These conditions tend to increase the number of victims of this malady; they cause patients to develop it here who never had it before coming here and who probably would not have had it, had they not come to a dry climate, and aggravate those who have the inherited tendency or who already have hay-fever. We are all familiar with the patient who, having terrific hay-fever, goes to a cooler and damper

region, and is immediately relieved until he returns here. Is this because he has gotten away from the plant or plants to which he is sensitive? Perhaps so, in many cases, but this can not apply to those patients who are sensitive only to one pollen, Bermuda grass, for example. They usually experience the same degree of relief by a sojourn in a community where there is more rain and dampness, although Bermuda may be more prevalent than it is here. I believe the explanation of this phenomenon is threefold: the difference in degree of exposure, which in turn depends upon length of seasons, amount of pollen washed from air by rain or fog, and so forth, the difference in humidity which affects the drying of nasal mucous membranes, and the difference in the quantity of atmospheric dust as an additional irritant.

The monumental work of Piness and Miller[2] bears out this belief to an extent. They studied two entire communities which were in many ways comparable to our own here. One was a potash-mining center with much alkali dust in the air; the other was a town built around a smelter. The high incidence of hay-fever in these places led to the belief that fumes from the smelter and dust of the mines were the important etiological factors. Piness and Miller made a botanical survey of the area, tested the patients with appropriate pollens, found the cause to be wind-borne pollens, and had the usual success by the treatments with pollen extracts. They concluded that, by the excess exposure to pollens, symptoms were caused in greater percentage of population than is usually shown in statistics. Neither the fumes nor the dust caused the symptoms. It is my contention that these people get some non-specific irritation of their mucous membranes from the hot, dry air and the dust, which renders them more susceptible to becoming sensitized; this type of irritation, plus the excessive exposure to hay-fever-producing pollens, aggravate the condition and make successful treatment more difficult.

The work done by other observers has left little doubt of the hereditary character of allergy. The study of Bray[3] in London has done much to make this clear. It is worthy of note that we have a lower positive family history of allergy in our hay-fever cases than the average we find in studies elsewhere. In 344 cases of hay-fever, Rackemann[4] found 35 per cent to have positive family history; Balyeat[5] reports 60.1 per cent positive in hay-fever and asthma; Kahn[6] had 80 per cent in 100 cases of hay-fever; Spain and Cooke[7] obtained positive hereditary history in 58.4 per cent of 462 hay-fever patients. In our own series, we found 27.6 per cent had a positive family history of some allergic manifestations. Since this percentage is lower than the average of authors quoted above, we feel that the climatological factors, with the drying effect on the nose and abundance of pollen, cause symptoms to occur in many of our patients who have so little hereditary hypersensitivity that the symptoms would not become manifest where the patient did not encounter the aggravating side effects of the natural forces.

As stated above, due to differences in altitudes, length and intensity of seasons, variations of rainfall in different sections, and amount of irrigation, the flora of one district of the southwest will differ greatly from another, although not separated by many miles. For instance, I understand that Russian thistle (Salsola pestifer) is considered an important factor in El Paso; in the vicinity of Tucson, it is so rare that it is quite unimportant; thus it is throughout our particular geographical location.

It is not within the province of this paper to discuss in detail the important pollen-bearing plants in any one community. Suffice it to say, that in Tucson we consider Bermuda grass (Cynodon dactylon) the most important of all; it comes on by April and continues to pollinate until November or early December. In the fall, August 15th to November, there are two others almost as important: slender ragweed (Franseria tenuifolia) and careless weed (Amaranthus Palmeri); the salt bush or shad scale (Atriplex canescens) is almost equally as important. A host of others could be mentioned, time permitting, but none equal to these in their hay-fever-causing proclivities.

Under the subject of adequate treatment, I propose to mention several points that I consider worthy of thought. First, may the time soon arrive when we will all speak the same language in the matter of dosage; be it pollen units, nitrogen content, percentage solution, A-B-C-D dilutions, or what not: uniformity

will clarify our study of the literature immensely.

As we read the literature, we are at once impressed with the great variation in what the different authors consider the optimum dosage of pollen extracts.

Grafton Tyler Brown[8] uses as maximum dose 1 cc. of 6 to 10 per cent solution; J. Mercer Anderson[9] advocates the use of small doses, none to exceed 0.15 cc. of 1:100 (1 per cent) and most 0.1 cc. of 1:500 or less. Thus, we have two extremes. It seems to me that the optimum dose should be the minimum amount of pollen extract that is compatible with protection of the patient against symptoms. A case in point:

Mrs. M. was treated elsewhere with Bermuda-grass extract. When she attained a certain dose, the size of which I do not know, she had an untoward local reaction and constitutional reaction consisting of marked increase in hay-fever symptoms and asthma. From that time on, each subsequent dose was apparently increased and gave similar or worse reactions. I treated her this season with complete relief of symptoms; when I gave her 0.3 cc. of 1:1000 solution, she had a large local reaction. I dropped to .2 of 1:1000 solution without any subsequent increase in dose, accompanied by a complete relief of hay-fever. I feel that we should attempt to classify our patients according to Cooke[10] et al as nearly as possible; then proceed without any preconceived ideas as to what the dosage is to be, but be guided by reactions and symptoms.

This suggests to us the question of preseasonal, coseasonal, or perennial treatment. We need only to read the current literature to see that the perennial treatment, according to Brown[11], Unger[12], and others is preferred by most authors. I am in accord with this conclusion. I do take exception, however, to the treatment in this section of the country by the preseasonal method. Our season is much too long, and the immunity produced is much too transient to hope to protect our patients with a brief preseasonal desensitization. This is another reason why I think the observers in the east have little conception of what our hay-fever problem is in the southwest.

One of my greatest antipathies is the so-called prepared treatment set that is put on the market by the various manufacturing concerns. They should be condemned because, when the usual series of fifteen injections are completed, the patient, and perhaps the doctor, thinks he has finished the desensitization and that he has had all that is necessary to protect him through the season. Most often this is hopelessly inadequate. It gets the doctor and the method of treatment in ill repute. It should further be condemned because of the inflexibility of the doses. It is often necessary to repeat the former dose or even give less than the preceding, and this cannot be done with the serially dosed preparations supplied by so many manufacturers. The use of these prepared sets is bound to lead to disappointment and failures in obtaining satisfactory results.

Believing that preseasonal treatment is inadequate, and the perennial treatment is decidedly the most efficacious, we are still forced to treat practically all cases coseasonally, with all the attendant dangers, making extreme care even more imperative than we are taught by the authorities. The intervals between doses and the percentage increase in the doses, must be considered most carefully. It is our custom to begin the treatment with three injections weekly, beginning with 1:100,000 to 1:10,000, depending upon tolerance. As time goes on, and a larger dose is attained, this is changed to twice weekly, and finally once weekly when we have reached what we consider the maximum dose. This is continued throughout the season unless symptoms recur; then we find that if injections are given more often, usually symptoms immediately decrease. In giving treatments as often as three times a week, we do not increase the dose so rapidly as some—often .05 cc. or less, depending, of course, upon reactions. We feel, like Vaughan[13], that if the treatment gives 75 per cent of the patients less than 90 per cent relief, the blame is on the doctor, and the treatments are not adequate.

We are all familiar with the multiple sensitivity of most patients, and, as pointed out by Gelfand[14], many of our failures are due to sensitivity to allergens that are not pollens. However, inhalants are the greatest single cause, by far, and it is only in the rare case that success or failure in treatment is going to depend upon a food offender. Thus, in failures, we should study particularly the inhal-

ant group for the cause, more especially to see whether we are overlooking an important pollen.

No paper of this kind would be complete without mentioning constitutional reactions, the great "bugbear" of all desensitization methods. Waldbott[15] has pointed out the causes of practically all of them. I believe it can all be summed up in one answer, viz., overdose. Whether the overdose is due to too large a single dose, too frequent injections, an exposure to a different antigen in conjunction with the pollen extract, pollen absorbed through the nasal passages in addition to the extract administered, it invariably represents an overdose. In some 7,000 injections in the past three years, we have had five constitutional reactions; in none of them was there an unusual increase in dosage, nor a change from old to new extract. The explanation that seems most plausible is that the injection was not the only cause of the reaction, but the pollen absorbed by the mucous membrane was the contributing element that, in conjunction with the pollen extract, was enough to cause the reaction. These reactions were all similar in each of the five instances characterized by an aggravated attack of hay-fever: profuse watering of nose and eyes, protracted sneezing, swelling of lips, eyelids, tongue, oral, and pharyngeal mucous membranes, generalized urticaria; in one there was asthma. Four occurred in 10 to 20 minutes after injections; one some 4 or 5 hours following usual treatment. In none was a very concentrated solution used, the greatest was .1 cc. of 1:100 solution. All were readily controlled by the use of epinephrin. It has been our custom to drop back to about the fourth or fifth preceding dose and work up very slowly, always stopping below the dose which precipitated the constitutional reaction, and to date we have not had two to occur in the same patient.

Means of preventing reactions—such as the use of tourniquet as advocated by Duke, mixture of the extract with epinephrin before administration, the withdrawal of the syringe plunger to assure one that the needle is not in a vein, hard pressure with cotton sponge over site of injection to prevent back seepage into a vein, having the patient wait in the office to observe the local reaction, and so forth—are familiar to all. As important as they all are, they are insignificant in comparison to the selection of the proper dose, as constitutional reactions are always due to an overdose.

Finally, I wish to reiterate that failure to relieve more than 90 per cent of seasonal hay-fever symptoms is a reflection on the doctor, and when this occurs, he should go into consultation with himself and analyze the cases more closely to find wherein the causes for failure lie.

SUMMARY

1. Due to different natural forces in the southwest, we have a hay-fever problem here that is unique.

2. The low humidity, the hot dry air and possibly dust, and the winds, add their quota to the difficulties of successful diagnosis and treatment.

3. Importance of knowledge of local wind-pollinated flora, adequate treatment, proper dosage, and systemic reactions, are discussed.

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DISCUSSION

(Of Papers of Drs. Wilson and Smith)

DR. GEORGE TURNER, El Paso (opening):

Speaking of Dr. Smith's paper. It is extremely practical, dwelling on the practical side of treatment. Both papers touch on etiology. A most important point was brought out and that is that pollens differ in different localities, even in this arid country. Pollens that cause the greatest trouble in Phoenix are different from those in Tucson or El Paso. For example, ragweed has been almost unknown in El Paso, but within the last few years some western ragweed has begun to appear along the roadways. The most common pollens in this locality are (1) cottonwood, (2) Russian thistle, (3) Bermuda grass and (4) careless weed. Dr. Wilson mentioned climate as a possible cause of so many cases of hay-fever, on account of the drying effect on dust or pollen. This locality was once a lake bed, which might add some factors in the dust, such as alkali or iodine. Referring to the observation that pollens differ in different localities, the toxicity of the same pollen will vary according to the climatic conditions under which it grows. With regard to Bermuda cases who go back, before desensitization is completed, to where there is plenty of Bermuda but do not have hay-fever; it is possible that the atmosphere conditions have much to do with this or the type of pollen produced in the two places may be different. In the arid climates the pollens are more toxic. Hay-fever is a local problem; you should know the pollens of your own locality before treating patients. If the toxicity of the pollens is different, it will be impossible to standardize on any given quantity. In Dallas, Dr. Black standardizes his maximum dose on 1 cc. of 1:10 dilution. You take the western pollen and give 1 cc. of 1:10 dilution and you will get a strong reaction, no matter how much you have desensitized the patient. The dosage will depend on the toleration of the individual patient and must be just below the toleration dose.

With regard to treatment. To the important questions of seasonal or pre-seasonal treatment, another should be added, that is, the prevention from the public health standpoint. In these arid regions very few of the hay-fever producing plants are in the cities, and those present are brought in by irrigation. We are growing the plants that are directly responsible for the affliction from which we suffer. Several years ago, hay-fever was bad in El Paso, because much building and street work had dug up the ground and left it moist enough to grow Russian thistle. We had a crop of this every year and much careless weed. It is entirely possible to curb hay-fever by weed eradication and an active campaign was begun for weed destruction, with the result that the incidence of hay-fever in El Paso was decidedly decreased. Treatment is important but prevention is a great help in cutting down the amount of hay-fever. Year-round treatment is probably the most important; preseasonal treatment to the point of 1:100 dilution will not give a sufficiently lasting immunization to carry patients through a long season. If carried into the season, you may run into reactions by the addition of pollen to what is given by injection.

DR. CHAS. S. KIBLER (Tucson): Wish to congratulate Dr. Wilson on his paper on the peculiarities of the problems in the southwest. Plants do change their habitat and adaptability. Some twelve years ago we found no Russian thistle in Tucson, but it is now present and has increased to the point where it is a real problem. Dr. Phillips has called attention to the fact that the same thing has occurred in Phoenix, that is, Russian thistle coming down into the lower altitude. Careless weed, which is a profuse pollinator in the fall, is apparently adapting itself to higher altitudes. A most important factor in the southwest is the dryness of the atmosphere. One per cent over the country and four to five per cent of the population in Tucson have hay-fever. Patients who get complete relief at the coast do so because of the humidity. The best preservative of pollen is dryness; in the southwest, pollen produced in a given day is not destroyed by the moisture and finally settles in the dust, and is blown up in the air the next day or later. In relation to Dr. Smith's paper. In an off season when the patient has had the maximum dose, it is not necessary to inject oftener than once a month. This will afford adequate protection in an off season.

DR. E. W. PHILLIPS (Phoenix): Just a word about Russian thistle. It took six years to work into Phoenix and get so it could live. I predicted some years ago that it would get around to produce a fall crop. This year it did make a fall crop, a secondary growth from the stalks that dried up last June.

DR. HILGARTNER (Austin, Tex.): The hay-fever problem always attracts attention. In central Texas the chief offender is cedar, and citizens wanted to cut down all the cedar for many miles around. From the point of view of the rhinologist, the papers you have heard today and those seen in the literature do not sufficiently consider the conditions of the nose. In the eyes of the layman, any watering of the eyes is hay-fever. There are three types: (a) that due to spurs or polyps in the nose; (b) that due to hypermia or turgescence of the mucous membrane of the turbinates; (c) that due to plant pollens. In central Texas we have to contend with cedar, Bermuda grass and ragweed. We have many patients cured by removing polyps and spurs. The desensitization has been rather unsatisfactory in our hands and that of our associates in Austin. I would like to suggest two procedures that have been successful and not yet mentioned. The first is the method of Zinsky: this is the use of the diathermy current and just touching the mucous membrane of the turbinates with the positive electrode; this changes the lymphatic supply of the turbinate; with shrinking and desiccating the mucous membrane. The method that has been successful in the hands of Dr. Loving and myself in fifty or sixty cases is called the zinc

ionization. The nose is anesthetized by cocaine or some other anesthetic, and is packed with a one per cent solution of zinc sulphate on a tampon. Galvanic current is used with the electrode in the nose, 1 to 5 ma. and 15 to 20 minutes. The zinc salt splits up, with the deposit of metallic coating on the mucous membrane of the nose. The membrane shrinks down, the turbinate gets smaller and the patient gets along much more comfortable following this than where many injections have been taken. It is quite rare that as many as three treatments are necessary. From 75 to 80 per cent get complete relief or cures for two, or three years, which is as long as we have used the treatment. It is a procedure of choice and men working along hay-fever lines should consider it. Some use the treatment twice, first on one side and then on the other; it causes some discomfort, so they do not do both sides at one sitting. Once in a while you get asthma which can be taken care of with adrenalin or ephedrin.

DR. WILSON, Tucson (closing): I wish to thank the men for the discussions. Dr. Turner brought up some points worthy of consideration. In spite of what has been said about climate, Bermuda grass may not affect patients the same; it is a matter of difference in pollens. Do not care for the removal of polyps, spurs or surgery in the nose for the relief of seasonal pollen disease, though it may relieve what appears to be hay-fever to the patient. With regard to zinc ionization, want to know more about it. Recently, men in Philadelphia have worked with the application of pure phenol to the nasal mucous membrane; fifty or sixty cases have gotten relief through a whole season. This should be followed up.

REACTIONS IN BLOOD TRANSFUSIONS

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(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

Blood transfusion has become the most common therapeutic agent at our disposal today. It is almost the universal treatment for every known ailment that we come in contact with. The diseases in which it is absolutely contra indicated are very few and obvious. In polycythemia, of course, we are dealing with too much blood, and in certain cardiac cases where a failing heart is already over-worked the strain of additional blood will often result in acute failure and death.

At present, blood transfusion has become so common a practice among practitioners, that a word of warning should be given against "familiarity breeding contempt.'"

Back in 1920, Dr. J. Pemberton[1,2], of the Mayo clinic, said in an article appearing in the Iowa State Journal of Medicine, "The operator should be conversant with all the dangers associated with the transfusion of blood. He should exercise judgment in advising the procedure and he should be conscientious in the selection of donors. The application of this valuable therapeutic measure must not be undertaken without a careful consideration of all the dangerous complications that may follow. The procedure is very often considered only a simple intravenous medication or a minor operation, while in reality its potential dangers place it with the major operations."

As early as 1667, Jean Baptiste Denys described in vivid style the outstanding features of the so-called hemolytic transfusion reactions, which until recently served as an inexplicable and insuperable barrier to the transfusion of blood. An understanding of the nature of the incompatibilities that are responsible for these frequently fatal reactions came only after the studies of Landsteiner on hemagglutination in 1901. A simple method for determining compatibility grew out of the classifications of Jansky (1907) and Moss (1910). As a result of these discoveries, transfusion of blood became a popular therapeutic procedure at about the time of the world war; today, provided one has taken the necessary precautions in preliminary grouping and cross-agglutination tests, it is a procedure relatively free from danger.[3] Nevertheless, transfusion reactions still occur, and although some of them are undoubtedly due to carelessness in the preliminary steps, it has been learned that certain reactions, most of them mild but others severe and fatal, can not be clearly explained on the basis of the obvious incompatibilities discovered by Jansky and Moss. In perusing the literature I have found that nearly every author attempts to classify these reactions. All of them are based primarily on symptomatology, and are designed for the guidance of the operator of the transfusion.

These reactions can be classified as hemolytic, chemical, and proteolytic. The proteolytic can be further subdivided into allergic and anaphylactic.

The reactions due to hemolysis and agglutination are always serious and often fatal. Those falling under this heading are by far the most severe. Death has been known to occur from the introduction of only 44 cc. of blood. In the majority of the cases the reactions manifest themselves rapidly, and if the patient is being watched very carefully by the operator, he can stop the procedure before a sufficient amount has been given to cause death.

The first symptom is usually subjective, the patient complaining of severe pain in the lumbar region of the back. This is quickly followed by flushing, and complaints of feeling hot all over the body, especially the chest and face. Following the hot flush there is paling of the skin, the face often becoming livid. Profuse perspiration, dyspnea, cyanosis, failing pulse, and dilatation of the pupils, are accompanying symptoms. The patient often becomes panicky and will call on the doctor to do something, because death seems imminent.

Usually if the transfusion is stopped promptly and adrenalin is administered by hypo in 15-minim doses every fifteen minutes for several doses, the patient will rally. A sharp chill and rise in temperature usually follows this type of reaction. Atropine 1/150 grain, combined with morphine, will be beneficial and promote the comfort of the patient.

These acute symptoms are usually followed in a few hours by hematuria, with the presence of albumin and casts in the urine, and sometimes by anuria, which always adds a serious complication to the situation. A blood examination will show evidence of acute hemolysis.

In those cases where death occurs, the reaction generally runs a peculiar and highly characteristic course which presents the following features: Immediately after transfusion, there is a sharp febrile reaction, followed frequently by hemoglobinuria and invariably by suppression of urine. There is an interval of several days during which there is symptomatic improvement but continued oliguria, and jaundice appears. After this interval the characteristic features of the delayed reaction develop rapidly. They usually begin with agitation or drowsiness which is replaced by out-spoken evidence of uremia; convulsions and coma may supervene. In those cases that recover from these severe reactions, the picture does not begin to change usually until about the twelfth day, complete recovery taking about three weeks.

Acute and massive blood destruction by hemolysis throws a tremendous load on the kidneys in the effort to clear the blood stream of its broken down hemoglobin, proteins, and cellular debris. These elements are insoluble in an acid medium and, consequently, the tubules of the kidneys become clogged, resulting in interference with normal function, which causes urinary suppression, edema, coma, and death.

These severe cases may be benefited by intravenous injections of glucose, alkalinization, and diathermy to the kidneys.

The real treatment, however, lies in the field of prevention. Since one fatal case which occurred in St. Mary's Hospital (Tucson) over a year ago, there have been no hemolytic reactions in twelve cases on my service. This case was seen by me in consultation three days after the transfusion. The cause of the error was never determined, because, in addition to the donor being in the same group as the recipient, the bloods were cross-typed. We believe the possible error lay in the fact that the cross-typing was observed only thirty minutes, which is not sufficient length of time to observe clumping or hemolysis in some slow-acting sera.

Since that time all cross-typing is observed for a full forty-five minute period, and under constant temperature. We use only the grouping of Jansky and Moss to determine what group the patient is in. All bloods are cross-typed, for every transfusion—fresh blood being used. Such a procedure is time consuming but we believe it is worth while.

We must include in this class of reactions, those occasionally seen after transfusion of individuals suffering from certain pathologic conditions in which there is a very active hemolytic agent at work. These are not constant but may appear in such conditions as pernicious anemia, purpura, hemolytic jaundice, leukemia, malignancies, and sepsis. This type of reaction can be neither foreseen nor avoided, but the possibility of its occurrence should be kept in mind so that prompt measures may be instituted to counteract its effect should it occur.

In speaking of the chemical reactions, I refer to those reactions occurring where certain

chemicals, such as sodium citrate and saline, are used with the blood from the donor. The symptoms are so similar to those of the hemolytic reactions that we can not differentiate them symptomatically, except that they are usually milder, and where whole blood is used between the same individuals the reactions do not occur.

I do not wish to enter into the controversy of citrated blood versus whole-blood transfusions; both sides have their good points. In isolated communities, with refractory children, and so forth, the citrate method unquestionably is the better procedure.

I use the direct method altogether. The apparatus is the Scannell, which, briefly, is a 20 cc. syringe with a three-way pet-cock attachment, whereby the blood is withdrawn into the syringe from the donor and is forced into the recipient when the pet-cock is turned and the piston of the syringe pushed home. The third way is used to wash the syringe out with sodium citrate solution.

Professor Lawrence H. Snyder[4] of North Carolina State College, in his treatise on "Blood Grouping in Relation to Legal and Clinical Medicine," says: "There are both advantages and disadvantages to the citrate method. The disadvantages are the possible occurrence of citrate reactions, the danger that the availability and simplicity of the method may lead to the performance of the operation without sufficient experience, and the possible bad effects of citrate upon blood. Citrate reactions are known to occur. Various workers have found reactions occurring after citrate transfusions. There seems to be a variation in the tolerance of different people for sodium citrate. It has also been stated that citrate renders the corpuscles more fragile, diminishes complement in donor's serum, reduces the opsonic index in the plasma, reduces the phagocytic power of the leukocytes, and destroys platelets."

In my opinion, if a transfusion is really needed the most benefit is certainly to be derived from the whole unadulterated blood.

As I said before, I consider the hemolytic reactions, by far, the most important and severe; but there are many cases on record where the proteolytic type have been extremely dangerous, and a few fatalities have occurred.

Of the allergic reactions, two fairly distinctive types are seen: the mild febrile type and those showing urticarial wheals, asthma, and so forth. In checking over the literature, reports indicate that twenty per cent of the cases where the direct method is used, show the mild febrile type. Approximately five per cent of these are accompanied by a chill. I could find no definite statistics on the indirect or citrate method.

Any rise in temperature of one degree or more above the average level before transfusion, and occurring any time within twenty-four hours following the transfusion, is considered a reaction. Those cases where the rise in temperature is accompanied by a chill show the most marked reactions.

These cases always cross-type perfectly, and there is never any indication in the urine or by any tests that hemolysis occurs. They always respond very readily to adrenalin chloride in 15-minim doses. As a prophylaxis one may use fasting donors on those cases that are known to react in this manner. It is not practical to use them, however, routinely.

About ten per cent of individuals show the other type of allergic reaction, where one gets the skin manifestation, intestinal upsets, or asthma. It varies in intensity from a slight erythema to general urticaria, at times involving all the mucous-membrane surfaces, with swelling of the eyes, lips, tongue, larynx and bronchi, as evidenced by respiratory difficulty, and even intestinal cramps and diarrhea. A chill and elevation of temperature may or may not accompany these symptoms. In its most severe form it can seriously endanger the life of a patient. The reaction may manifest itself after only a few cubic centimeters of blood has been introduced and usually is not delayed longer than twenty minutes after the transfusion is completed, but there are a few cases on record where the patient has developed urticaria several days after the transfusion. The prompt administration of adrenalin chloride will relieve the sufferer very quickly as a rule, though the more severe attacks may take several hours to subside.[5]

It is because of the danger of the allergic reactions that one should take a very careful history, ascertaining whether the recipient has ever had urticaria, asthma, hay-fever, or intestinal allergy. Some of these patients know

they are sensitive to eggs, for instance. A fasting donor, or at least one who has not eaten any of the offending foods for several hours, should be used.

I am submitting the case record, briefly, of a very striking case. Mrs. M., white American, age 23, came to the hospital Oct. 2, 1932, for a curettage because of incomplete abortion. She had been bleeding three weeks. Her temperature, pulse, and respiration were normal. She was curetted and some remnants of the placenta and membranes were removed by a colleague. Three days later, because of weakness and secondary anemia, I was asked to give her a transfusion. Her red cells numbered 2,580,000, her hemoglobin was 48 per cent, her white count showed 8,200 cells, with 72 per cent polys. Temperature normal. Her husband was found suitable and arrangements were made for the transfusion. I gave her 360 cc. by the direct method. In forty minutes after the operation she began having erythematous blotches on her face and neck. These were accompanied shortly by urticarial wheals all over her body, arms, and legs. Her lips swelled and her eye-lids almost closed her eyes. She developed a cough and complained of abdominal cramps. The itching was intense. Adrenalin chloride was administered in 15-minim doses every fifteen minutes. After the third dose, alleviation of the itching was obtained, but the wheals did not disappear for twenty-four hours. The next day her temperature ranged up to 101°, but subsided with no other ill effects.

On our rechecking this history, the patient said she always had "hives" when she ate eggs. Her husband said he had fortified himself with an egg malted milk before coming to the hospital to give the blood. I believe this reaction could have been prevented had I used a little fore-sight. This patient showed no trace of albumin or hemoglobin in her urine following the reaction, thus ruling out hemolysis as a cause of the reaction.

Karsner, in the Journal of the American Medical Association of January 6, 1921, gives the following definition and explanation of the anaphylactoid type of reaction: "It is well known that the injection of foreign protein into an animal may lead to reactions of greater or less severity, and that there is considerable individual variation within any given species. In certain instances, as for example the injection of eel serum into guinea pigs, fatal reactions may follow the introduction of extremely small amounts of the foreign protein. It is rare, however, that any individual shows reaction to a native protein from another individual of the same species, but such a possibility can not be entirely excluded. In other words it is to be considered possible that the protein of one man may be toxic for another man."

This type of reaction differs in many ways from any of the others. The cases reported all have typed perfectly, both before and after transfusion. None of them has shown evidence of hemolysis in the subsequent urine examinations. All of them have had their reactions in about one hour following the transfusion. All of them have their reactions ushered in by a severe chill followed by very high temperature. There are cyanosis, very rapid respirations, mental confusion, and in a majority of cases, convulsions. Some have required chloroform or ether to control the convulsions. The temperature reaction usually lasts for days. They never show urticarial or skin manifestations. The character, severity, and duration of reactions, the absence of incompatibility between the blood of the respective patients and donors, and the absence of any skin irritation or urticaria, usually serves to classify this type of reaction.

It is a very rare type. I have seen one case that comes under this classification. In this case the patient became sensitive after repeated transfusions from the same donor. The case history is that of a Negress aged 37 years, who came to the hospital in January, 1930, with a bleeding fibroid of the uterus. Her red count was 1,300,000, with a hemoglobin of 32 per cent. She was very weak and emaciated. Her husband was a very large Negro, and he cross-typed perfectly. I gave her 250 cc. the first time, without any reaction. This was followed in six days by another transfusion, of 360 cc. Eight days later I gave her 400 cc. more. All of these transfusions were from the same donor, and they were cross-typed before each. Her red count had mounted to 2,750,000, with the hemoglobin 52 per cent, before the third transfusion, and her general condition was very

much improved. About fifty minutes after the last transfusion the patient complained of headache. She immediately had a very severe convulsion in which her head was drawn back. Her respirations were rapid and labored. Her nails were cyanotic. This convulsion lasted about twelve minutes. When it ceased, the patient quit breathing for a full minute or more, and I could not feel her radial pulse. In the course of another fifteen minutes she was breathing fast but otherwise normally. Her pulse was full and the rate was 120. She was given adrenalin. Her temperature was 106°, and continued high for twenty-four hours. During the next thirty-six hours she had several light convulsions, and was delirious practically all the time. Morphine and adrenalin were given frequently. The temperature curve gradually came down by lysis over a period of eight days. At no time did we find more than a trace of albumin and a few hyaline casts in the urine. Her red cells were 3,650,000, with 64 per cent hemoglobin at the end of this time, and we decided to operate. Her ultimate recovery was uneventful.

I wanted to try another small transfusion from another donor, but the patient refused.

E. Traum,[6] after reviewing the literature, recommends different donors for repeated transfusions on the same patient. Apparently the skin tests for detecting sensitivity with the donor's serum have been very misleading.

In conclusion, there is indisputable evidence of the actual and potential dangers to the life of a patient from blood transfusion reactions. To eliminate some of these and to reduce the frequency and severity of others, the following precautions should be observed.

1. All typing should be done by experienced technicians, and no blood should be used simply because the donor and recipient are in the same group; they should be cross-typed.

2. Avoid methods which may produce toxic or coagulation changes in the donor's blood, as in citrate methods.

3. Carefully check the history of the recipient for evidences of allergic tendencies; use fasting donors for these, and for those who have shown allergic reactions to former transfusions.

4. The operator should perfect his technic and skill. He should familiarize himself with the danger signals of reactions and be prepared to institute prompt treatment if they appear.

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DISCUSSION

DR. VICTOR RANDOLPH (Phoenix): This is a very interesting paper on a subject in which we are all interested. Dr. Littlefield has given us the points with which we should be familiar in carrying out this procedure. I should like to ask whether he has had any case in which he noticed untoward symptoms and in which he discontinued the transfusion and continued with saline.

DR. MOTT RAWLINGS (El Paso): There are two points I should like to emphasize: the great benefit to the patient of the direct method, and the necessity of not transfusing the same patient from the same donor more than once.

DR. CHAS. S. KIBLER (Tucson): The incident of the man who took the egg drink before the transfusion brings up an interesting point. That is, whether the normal individual does not always absorb food into the blood stream. There is good evidence that any substance in contact with the body—in gastro-intestinal or respiratory tracts, in the eye, or taken by injection—very promptly goes into the blood stream. Some one has tested by injecting a live culture intracutaneously; as quickly as possible he aspirated the heart blood and cultured it. He found the cultures positive for the same organism injected intracutaneously. This proves that most injections are practically intravenous, so far as time of absorption is concerned.

DR. W. W. WAITE (El Paso): I have enjoyed this paper very much. The success of blood transfusion and the choice of technic depends on who is giving it. I have given a few off and on, usually to people without means. At the time of our last meeting here I was called out of the meeting to the hospital; I found a patient unconscious and bleeding badly. Gave her a transfusion and before we got through she was talking. That night we gave her another transfusion and the next day she was quite conscious but did not remember anything about the first one. Three or four days later we were using the donor we had used the first time; it was shortly after the noon-day meal. About four or five minutes after we started the transfusion the patient started to die; we immediately stopped and gave all kinds of restoratives, and she recovered. Later she took another transfusion with no ill ef-

fects. With regard to the whole-blood method: this is undoubtedly the best in the hands of one who is skilled in the technic and who is giving transfusions frequently. If you give only an occasional transfusion, you will get better results from the citrate method, because it is not quite so easy to make mistakes with it.

DR. F. D. VICKERS (Deming): Whenever the subject of allergy comes up, somebody always gets up and tells how sensitive people are to egg albumen. One man said he had a patient who could not wear hen feathers but could wear rooster feathers.

DR. LITTLEFIELD (closing): Wish to thank the men for the discussion. I can see no reason, if a patient is receiving blood and begins to react, why it should not be continued with saline. The saline will not do the reaction any particular good, but do not know of any bad effects from the saline. The point that Dr. Kibler made about foods going directly into the blood stream is interesting. As I recall the transfusion mentioned in the paper, it was started within forty-five minutes of the time the egg malted milk was taken. In the controversy between the whole-blood and the citrate method, I personally favor the whole-blood method for the reason stated about citrate reactions. As Dr. Waite has pointed out, it is a matter of technic. The whole thing comes down to getting the needle into the vein; after that it is just a matter of pumping.

THE PHYSIOLOGY AND PATHOLOGY OF THE THYROID

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(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

All endocrine glands may be said to have a specific function: the production of substances essential or valuable to the organism in maintaining life. By virtue of the action of these secretions, other associated activities are from time to time attributed to the various structures in the endocrine system.

The physiology of an endocrine organ may be investigated by means of experimental extirpation, transplantation, stimulation, and administration of either the gland itself or the active principle thereof, followed by clinical and pathological observation of material wherein the organ under study evidences deviation from the normal. These procedures are especially applicable to the thyroid, wherein the axiom is illustrated that any understanding of a pathological process in a tissue must be predicated on a knowledge of the physiology of the structure involved.

Thyroid pathology is, except in cases of thyroiditis and malignancy, one not only of microscopic and gross change in structure, but also a pathology of function with resulting systemic manifestations. These functional abnormalities have their counterparts in experimentally produced physiological terms of increased or lowered glandular activity.

Complete thyroid extirpation is a difficult experimental procedure in adult animals, especially the dog, due to the presence of accessory glands and the proximity of the parathyroids[1]. Ablation in young animals is comparatively simple. It is followed by a picture comparable with that of humans suffering from glandular insufficiency. The hair and skin become dry, weight is increased, body temperature falls due to the absence of heat production in the restricted metabolism, sugar tolerance is increased and carbohydrate mobilization is slowed. If the gland is removed at an early enough age, growth and bony development are impaired. In these subjects, secondary sex characteristics fail of normal development and mentality remains infantile. Cerebral cortical tissue shows neural degeneration.[41] Spontaneous or post-thyroidectomy hypofunction in either the adult human or animal engenders a picture similar to this except that changes in growth do not occur. The skin thickens and adiposity develops. Muscle tone is lost. Tissue regeneration is retarded. There is a relative anemia.[38] Body temperature falls and the subject becomes apathetic. There is, according to Galton[2], who quotes Warfield,[42] a masked hypothyroidism without myxedema, in which the patient has weight loss, fatigue, nervousness and lack of energy associated with a lowered metabolism and helped by thyroid therapy. The classical picture of myxedema is absent.

Feeding thyroid or the administration of thyroxine, the active principle of the gland, isolated by Kendall[3], produces symptoms comparable with hyperthyroidism in man. They are increased body oxidation, tachycardia, dilatation of the peripheral vascular bed, weight loss, increased mental, nervous, and physical activity. Symptoms of hypersensitivity of the

sympathetics (pupillary dilatation, arhythmias, and gastro-intestinal disturbances) may be present.

Thyroid transplants are occasionally successful. When they live, they function as normal thyroid tissue and supply the hormone to the organism in a normal manner. This largely eliminates the theory that thyroid secretion is dependent on a neurogenic stimulus for activation.[4] The presence of epinephrine in the blood stream of the individual in amounts sufficient to cause any systemic effect is highly questionable.[5] To allocate the place of a thyroid stimulant to the adrenal medulla on the basis of the epinephrine secreted into the circulation[6] is at the present time somewhat fantastic. It seems wiser to consider the stimulus for thyroid secretion to be either a real or potential hypothyroidism, as does Plummer.[7] It is possible that fright, anger, and emotion may stimulate thyroid excess function, as Crile[8] and others[13] claim, but these may cause primary thyroid stimulation rather than an indirect excitation through adrenal influence.

The known function of the thyroid, to regulate body catabolism and anabolism and keep them in proper balance, may be due to an electro-chemical mechanism, as suggested by Crile[9], or may be a catalytic phenomenon, as advocated by Mayo and Plummer.[7] By virtue of the ability of thyroxine to influence the oxidative processes of the body, the thyroid plays an important part in the regulation of body temperature[10] the mobilization of carbohydrates, nitrogen balance, and calcium excretion.[20] According to Kendall the function of the thyroid is to "regulate the capacity of a cell to use oxygen[40]."

Much has been written concerning the influence of the thyroid on the endocrine system. It remains, however, clouded in the realms of speculation. Statements of facts cannot be made in this matter until research has untied many an endocrine knot. It is unwise to hazard opinions on glandular interrelations when so little is known concerning such dramatic structures as the adrenal medulla, the thymus and the testes.

Crile[11] has expressed opinions concerning adrenal-thyroid correlations. He believes there is a reciprocal action between the thyroid, the adrenals, and the nervous system, on a physiochemical basis in which the thyroid is activated by the sympathetics. He draws the conclusion that the adrenals (being the brain of the sympathetic) are most important in determining thyroid activity. He also states that the thyroid, through control of the permeability of the body cells, governs the rate of cellular activity so that, in increased thyroid function, cell action is accelerated.

The thyroid's influence on liver function has received considerable study. Simonds and Brandes[12] found the livers of dogs fed thyroid substances to be almost glycogen free. There is apparently no serious impairment of liver function accompanying this change[16], although John[13] quotes authority that the hyperthyroid liver shows atrophy annd extensive fatty degeneration. Asher found the hyperthyroid liver cells able to form glycogen but unable to hold it.

Whether changes in sugar metabolism are to some extent manifestations of endocrine reaction to thyroid secretion, is debatable. It is known that removal of the thyroid lowers blood sugar, that feeding thyroid produces a hyperglycemia and that thyroid extract acts synergistically with adrenalin in increasing adrenalin hyperglycemia. Over half in one series of hyperthyroid cases, showed impaired sugar tolerance. This may be due to increased mobilization of glycogen, hyperadrenalism as a result of adrenal stimulation, or the effect of throwing a heavy load on a partially exhausted prediabetic insulogenic system.[13]

The parathyroids and thymus, due perhaps to their proximity, have often been allegedly changed by thyroid pathology. It is known that thyroid extract is of value in tetany[14] and that thyroid-fed animals excrete large amounts of calcium[15]. Some authorities state that thymic hypertrophy occurs in thyroid feeding and early involution follows thyroidectomy. Not enough work has been done to settle the matter of thyropituitary relationships. The literature states that the anterior lobe of the pituitary will hypertrophy if the thyroid is removed.

That gonadal function to some extent depends on thyroid action seems clear. Myxedema frequently follows the menopause; ovarian hypertrophy after thyroidectomy is common. Thyroid enlargement at puberty and gonadal failure in cretinism are well-known entities.

As Menne[17] states, neither clinical nor experimental data are sufficient to date to settle the question of the direct effect of the active principle of the thyroid gland on the heart muscle in hyperthyroidism. Andrus[18] has shown in an animal which has been fed on large amounts of thyroid extract that, after isolation of the heart, the tachycardia remains, the oxygen-combining power and lactic-acid content of the muscle is increased, the glycogen content lessened. The loss of glycogen from cellular elements renders them more liable to injury[19], while increased oxygen and lactic-acid content are indications that the myocardium is participating in the increased metabolism of the body. Yater[23] has noted the fact that in a perfused heart thyroxine increases its metabolism. That the tachycardia is a reaction of cardiac muscle and not the result of sympathetic stimulation has been shown by crucial perfusion experiments[20 21 22].

The weight of recent opinion tends to discountenance the effect of thyroid secretion as a direct factor in organic heart disease[36]. Weller et al[24] and Rake and McEachern[19] found no gross or pathological changes in exophthalmic goiter hearts which were not equally represented in a control group.

It is rational to believe that a heart, laboring under the demands of a circulation attempting to meet the needs of a body with a greatly increased metabolism, may exhaust its nutrition and show evidences of insufficiency[25], particularly when its own myocardium is participating in the increased metabolic processes[37].

Goiter classifications rival those of nephritis in multiplicity. The majority of these are differentiated by the presence or absence of toxicity or nodules. An example of the former is cited by Moulton[26], who makes the elemental classification of goiters associated with normal, hypothyroidism, or hyperthyroidism. Marine's classification is one based on the pathological picture: hypertrophy, hyperplasia, colloid, exhaustion atrophy, fetal adenoma and malignant adenoma. Van Meter[27] quotes a classification in which is a combined functional and pathological division, as nontoxic or toxic diffuse, nontoxic or toxic nodular.

Hertzler's[28] simplified grouping seems broad and practical. To him the division of the disease into groups illustrates the progress or stage of a single pathological process. He presents pathological and clinical material to justify this stand. His classification is (1) colloid; (2) adenoma without toxic symptoms; (3) adenoma with toxic symptoms; (4) Graves' disease (exophthalmic gland).

Hertzler states that he has, through many years' study of individual cases, seen one patient run the gamut of simple colloid, nontoxic adenoma, toxic adenoma, Basdow's triad, and exitus through heart failure. The stage in diagnosis is referred to as one would in syphilis refer to a papillary syphilid or gumma. If this conception can be substantiated by clinical data, it renders thyroid pathology clearer and makes the goiter of adolescence a less innocent thing than it is considered to be.

Histologically the normal thyroid gland consists of acini roughly polyhedral in shape, averaging 0.3 to 1 mm. in diameter, lined with cuboidal epithelium and filled with a gelatinous colloid. Between the acini are groups of cells resembling the epithelium lining the acinal vesicles. . Small connective-tissue trabeculae form a skeleton upon which these cells rest. Grossly the gland is smooth and regular in outline.

The commonest change in the thyroid is one of symmetrical enlargement. The lobe outlines remain uniform, but histologically the acinar compartments are increased in size and filled with additional colloid. The cuboidal cells of the lining are elongated and flattened. There is no increase in glandular proliferation, but the interstitial cells may have disappeared.

Nodular thyroids, or the so-called "adenomas," may be noduular grossly or discovered as such only on histological examination. The gross nodular, or to use Hertzler's term "bosselated," enlargements are knotty or lumpy thyroids in which new acini develop in colloid goiters as a budding process from the epithelium of old acini or by proliferation of interacinal cell groups. The colloid seems unchanged. The newly formed acini are lined by flattened cuboidal epithelium.

Multiple new areas are found in these adenomatous or bosselated glands. In fetal adenomas the growths are isolated and surrounded by a capsule, which separates them from normal tissue. Histologically they resemble the

fetal gland, containing but little colloid and many small acini. They seldom form papillary outcroppings, are of limitless growth, and easily degenerate or become malignant. They rarely become toxic.

The irregular new growths may be devoid of any functional activity or may be compensating for decreased function in the rest of the gland. At this time they are termed non-toxic. When they become active or their activity exceeds the normal requirements, toxicity may be attributed to them. Toxic nodulations on microscopic section frequently show increased vascularity, the cuboidal cells become spherical or hypertrophic, the colloid is granular, with cellular debris scattered through it. Papillary growths may appear sprouting from the epithelium into the colloid and many new acini are seen forming in the interstitial spaces.

The epithelium of the exophthalmic gland is usually columnar. Papillary outcroppings from the acinar linings may be so marked as to almost obliterate the colloid[35]. Epithelial proliferation is extreme and new acini crowd the interacinal spaces. Grossly the gland is granular and firm without nodulations. It is deep red on cut surface.

Graham's classification of malignancies of the thyroid gland, as quoted by Dinsmore[29], lists: first, lympho and spindle-cell sarcoma, the latter the most malignant of all thyroid tumors; second, mixed carcinosarcoma; third, scirrhus carcinoma, adenocarcinoma (the former 100 per cent fatal, the latter least malignant—neither found in the adenomata), papillary carcinoma and malignant adenoma (both discovered in adenomata). The papillary carcinoma metastasizes very slowly, whereas malignant adenoma is the most frequent cancer of the thyroid, with early metastasis through the blood stream.

Hertzler would include fetal adenomas as true neoplasms of the thyroid, inasmuch as they are isolated nodules, unicentric in origin, tend to limitless growth, and with age degenerate into cysts, become mildly toxic, or malignant. He states that, in 300 malignant goiters, nine of ten were from fetal adenomas.

The place of the adenoma in goiter pathology is a subject of controversy. Wolfer's theory is that they are developed from embryonic rests. Graham[44] feels that all nodular goiters might be classified with neoplasms similar to adenoma of the breast and fibromyoma of the uterus. He thinks they are due to a process of irregular hyperplasia and involution. Rienhoff[30], in a meticulous study of wax reconstructions of human thyroids, came to the conclusion that Wolfer's interpretation of commonly called fetal tissue was a technical error and that there are no fetal or epithelial rests in normal or exophthalmic glands and that the persistence of fetal tissue does not occur.

Inflammatory conditions of the thyroid may be either acute or chronic. Acute thyroiditis may accompany any infectious process elsewhere and resembles inflammation in any other tissue[31]. It usually does not go on to suppuration. In event of abscess formation, hypothyroidism from gland destruction may appear.

Riedel's disease[32] and struma lymphomatosa of Hashimoto are manifestations of chronic thyroiditis. In both there is marked lymphocytic infiltration of the glandular stroma with connective tissue deposits which go on to degenerative sclerosis of the entire gland. In struma lymphomatosa the gland grossly is white, firm and resembles a fibromyoma[33]; in Reidel's disease it is hard, friable, and looks like beefsteak.

In both conditions the thyroid is hard, but whereas in struma lymphomatosa the glandular outline is not lost, in Riedel's there is a woody induration, not only of the thyroid, but also of the contiguous cervical tissues, resulting in loss of lobe outline.

The etiology of chronic thyroiditis is unknown. Graham feels that there is no relation between the two conditions but that there may be some association between struma lymphomatosa and lymphosarcoma of the thyroid[34].

To summarize then: The thyroid is a gland capable of unusual functional and pathological abnormalities. In its normal state it is, perhaps more than any other single tissue, the balance wheel of the body. By virtue of its physiology, and its correlation with the other endocrines, it serves not only to determine structure and physique but also so to affect mentality, fatigue, and energy as to determine the personality of the individual.

* * * *

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Doctor H. F. Helmholz, Chief of the Division of Pediatrics at Mayo Clinic and Professor of Pediatrics at the University of Minnesota, was a luncheon guest of the El Paso County Medical Society, January 20th. Dr. Helmholz spoke on "Urinary Infections in Childhood."

WHAT EVERY WOMAN DOESN'T KNOW—HOW TO GIVE COD LIVER OIL

Some authorities recommend that cod liver oil be given in the morning and at bed time so as to assure an appetite for the oil, while others prefer to give it after meals in order not to retard gastric secretions. If the mother will place the very young baby on her lap and hold the child's mouth open by pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. Mead's Newfoundland Cod Liver Oil, of minimum acidity and prepared from fresh healthy livers, is well tolerated by infants and children and is palatable without flavoring.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silver-plated spoon (particularly if the plating is worn), a glass spoon has an advantage.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in one-third and one-half the usual cod liver oil dosage.

SURGERY IN TUBERCULOSIS OF THE THYROID

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(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

Tuberculous goiters have included some of the most desperate operative risks that have come into my thirty years' experience with thyroid surgery. One of these patients came to me on a stretcher and the degree of toxemia was so extreme in five that the many-stage operation seemed the only safe procedure. The basal metabolic rate ranged from 40 to 68; exophthalmos was pronounced; the apex beat of the heart ranged as high as 172 on the operating table and tremor was extreme. Ligations were done in two cases in my earlier experience, followed in one case by rapid partial excision and pack, with secondary closure. Only one patient was within normal limits as to pulse rate and basal metabolic rate, while two were moderately toxic. The degree of hyperthyroidism apparently has been considerably higher among my patients and the percentage of highly toxic cases greater—as also with many other American surgeons—than in series reported from foreign countries.

Fortunately thyroid tuberculosis is of relatively infrequent occurrence though it is of much interest and, because of the valuable lives concerned, it is of great importance.

This series includes eight cases from over 6,000 goiters under observation during thirty years. A series of seven cases was reported by Plummer and Broders[1], increased to twenty-one by Rankin and Graham[2]. These reports indicate the small number of tuberculous goiters.

CLASSIFICATION

Many classifications are given by different writers. Probably as simple and good as any is that of Wegelin[3], whose experience with thyroid pathology as professor at the University of Berne, Switzerland, is very great. He classifies acute and chronic tuberculosis of the thyroid, and states that most frequently the infection is hematogenous. Occasionally it is apparently primary as shown by postmortem examination, but probably actually metastatic in origin. Three forms of chronic tuberculosis are mentioned: (1) proliferating form, which is most frequent; (2) caseating nodules with abscess; and (3) sclerosing tuberculosis, sometimes mistakenly diagnosed as Riedel's iron-hard struma. Tubercle bacilli are seldom demonstrated: the pathological diagnosis is based on finding characteristic microscopic tubercles. The acute form is well illustrated by a case reported by Moschowitz[4], in which there was dysphagia, loss of weight, and fever up to 104.5°. This patient had a hard mass which was diagnosed as diffuse miliary tuberculosis.

Illustrating the sclerosing form, Budd and Williams[5] report three cases with a gross appearance of malignancy. There were, however, the symptoms of hyperthyroidism with loss of weight, tachycardia, high basal metabolic rate and nervousness. Probably Neuhof's case is of the same class: he reports[6] a young adult with dypnea, dysphagia, basal metabolic rate normal, no symptoms of hyperthyroidism, diagnosed as malignant. The growth was rubbery in consistency; the microscopic diagnosis was miliary tuberculosis. Meyer's[7] cases illustrate both the sclerosing form and those with abscess. He states that the symptoms resemble chronic thyroiditis or malignancy, or both; that cold abscess is less frequent; that rapid pulse rate, loss of weight, and other symptoms of exophthalmic goiter are not so frequent. My own cases include two with a pathological diagnosis of exophthalmic goiter and tuberculosis; three, adenoma associated with tuberculosis; and three of the sclerosing form, these cases giving the symptoms of exophthalmic goiter though not the microscopic picture.

It is interesting to note that two great authorities of earlier years believed that tuberculosis and goiter were never associated. Rokitansky[8] stated that the thyroid is never affected by tuberculosis. Jones[9] quotes Virchow: "The presence of goiter is proof that the subject was not tuberculous." He also states that in general miliary tuberculosis there are few thyroids involved. Extensive tuberculous involvement of the lungs or other important organs does not seem commonly to accompany thyroid tuberculosis. In speaking of

blood-stream or other metastatic origin of thyroid tuberculosis, Wegelin states that it is usually impossible to locate the original focus of infection.

DIAGNOSIS

A diagnosis of tuberculosis of the thyroid is seldom made without a microscopic examination. Exophthalmic goiter is the diagnosis most frequently made after examination and obtaining a history of the symptoms of the patient; slightly less frequently, toxic adenoma; cancer, simple thyroiditis, and Riedel's struma occasionally. The diagnosis on gross pathological examination of the tissue removed is also almost always incorrect, but has coincided with the preoperative diagnosis in all of my own cases but one, in which a diagnosis of thyroiditis and adenoma was made postoperatively in a case preoperatively diagnosed as adenoma only. Practically all writers agree as to the impossibility of preoperative diagnosis. The important point regarding diagnosis has been that surgery was definitely indicated in all cases. It seems highly improbable that any of these patients would have recovered without operation, certainly not with as full a measure of health as they have obtained following operation.

RESULTS

All of my patients have made satisfactory recoveries from their operations in spite of the fact that the situation seemed desperate in over one-half of the cases. Partial bilateral excision, removing only evidently diseased tissue, is usually indicated, but stage operation may be necessary, as before mentioned. Electro-surgery seems specially important in order to seal the rich blood and lymphatic supply and prevent metastasis. One patient died from apoplexy five years following the time when she first came under my care. The remaining seven were living and reasonably well at the last report. All but one patient are from five to twenty years past their operation. The gain in weight has been striking in most of the cases, amounting to 66 pounds in one patient who was much emaciatetd when she was first seen.

It is evident that, in the interest of permanent cure, general health measures are approximately as important as surgery. Most careful attention should be given to all those hygienic, dietetic, and climatic influences which have proved so vaulable in the cure of pulmonary and other forms of tuberculosis.

SUMMARY

Tuberculous thyroiditis may be either an acute or, more frequently, a chronic inflammatory process, which may go on to fibrosis or suppuration.

In the earlier subacute stage the symptoms may be indistinguishable from those of extremely toxic exophthalmic or adenomatous goiter; later on malignancy may be suspected.

A diagnosis is seldom possible without microscopic examination.

Surgical treatment gives excellent results in suitable cases though careful preoperative and postoperative care and frequently the stage operation, are essential to success; electro-surgery elimniates the danger of metastatic spread by sealing blood and lymphatic vessels.

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THE COMMON COLD

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(Abstracted from an address before the Las Vegas Kiwanis Club at its Annual Ladies' Night, December 6, 1933.)

Until recently, the common cold has received very little attention and consideration from scientific medicine. This neglect has probably been due to the fact that most individuals recover from their colds without complications, in spite of treatment that often is contrary or even injurious, and that 35 per cent of all colds recover with no treatment whatsoever.

Lately, the common cold is being recognized more and more as a predisposing cause of various more serious infections and as exacting a terrific toll in suffering and money. Amassed statistics show that the germs which enter and leave the body through the mouth

and nose cause 92 per cent of all the deaths from communicable diseases, and it may well be said that the Achilles' heel of the modern man is his mouth. Of these communicable diseases the common cold, or coryza, is the most frequent. It is responsible for a greater loss of time from school and work than any other single cause. The average person is partially disabled from two to six weeks each year due to colds, and it has been estimated that colds cost the people of the United States one billion dollars a year.

Too often do we hear, "Oh, it's only a cold." That may or may not be the correct diagnosis, as 50 per cent of all disabling diseases—such as influenza, measles, whooping cough, scarlet fever, and even tuberculosis, kidney disorders, and meningitis—frequently start with a sore throat or cold, and we must not overlook the seriousness of complications. Colds frequently are followed by serious illnesses; if the patient's resistance is low, any part of the respiratory tract may become involved, resulting in serious diseases of the nose, throat, and lungs.

If, through ignorance or carelessness, the individual blows his nose improperly, he may force infected material into the sinuses and start sinus disease, or through the eustachian tube to cause an inflammation in the middle ear. Many deaf people can trace their deafness to a cold; and acute inflammation of the eyes is frequently brought about this way.

It is evident that a whole train of troubles lie in the wake of a neglected cold. Even if it is just a cold, it is not to be taken lightly. What is more, it is very easy to give a cold to someone else and the cold the other person catches from you may result disastrously. Many a person with a weak heart has died from the effects of a common cold.

The seriousness of a neglected cold is testified to by the following epitaph found on an old tombstone in a New England cemetery:

"Here lies my wife, Samantha Proctor,
She ketched a cold and would not doctor.
She could not stay, she had to go.
Praise God from whom all blessings flow."

Before considering the discussion, it might be well to consider the question, "What is a cold?"

Cecil, in his excellent "Textbook on Medicine," states that "the common cold, or coryza, is a catarrhal inflammation of the upper respiratory tract, which results from infection by micro-organisms (germs) and perhaps from other causes not yet definitely determined." This sentence just about sums up all that we know definitely about the common cold.

Our grandmothers knew in their time that a cold ran a definite cycle, for they used to say, "two days to come, two days to stay, and two days to go."

This is frequently an understatement, but we know that a cold has three distinct stages. In the first stage, the nasal mucous membrane is congested. There is sneezing inability to breathe through the nose; the head feels heavy and stopped up; the eyes burn; the skin is dry; there is chilliness, possible fever, aching of the back and legs, and general discomfort. This stage lasts from one to three days.

The second stage is characterized by marked secretion and discharge of watery material. Areas of excoriation appear around the nose and mouth. The sense of smell, taste, and hearing are often impaired. Constipation is common. This stage lasts from two to seven days.

In the third stage, the watery discharge changes to a thick mucous, or muco-purulent, discharge and gradually subsides.

The results of the intensive research work done upon the common cold during the past eight years show that a cold is the same regardless of climate; that most people have two or three a year and that wage-earners of this country lose from one to three days a year from colds; that sex has nothing to do with the incidence of colds, but there is a class definitely susceptible to colds; that over two-thirds of the people have abnormalities or diseases of the nose and throat; also that occupation has a bearing on susceptibility, e. g., office-workers have nine times the colds that taxi-drivers have and four times as many as United States Army men.

Weather conditions and temperature changes markedly affect the prevalence of colds; a drop of ten degrees in the weekly average temperature was accompanied by an increase of eighteen colds per week among a group of 6,700 under observation. The name of the

disease "cold" implies a connection between weather and the incidence of colds.

Colds have a seasonal distribution and occur most frequently in the dark cold periods of the year. The most striking feature of the seasonal distribution is the high prevalence in the autumn, followed in the winter and spring by a series of epidemics. The incidence is not, therefore, as might readily be supposed, equally spread over the winter months, but consists of a series of distinct epidemics irregular in spacing and magnitude.

Age affects the incidence and severity of colds. The incidence of respiratory disease is at its highest in children under five years, declines progressively to about the age of fifteen to nineteen years, increases somewhat between twenty and twenty-five, and thereafter declines slowly as age increases.

The average person is partially disabled forty-nine days per year.

CAUSE

To the question as to what causes a cold, you may get any kind of answer you want, from the thoughtful hypothesis of an eminent scientist to the whim of a crank with an "idea." Dr. Volney S. Cheney, Medical Director of Armour and Company and Chairman of the Valmora Sanatorium Medical Committee, is convinced that colds result from an acid condition of the body which predisposes to infection with a filtrable virus (a germ so small that it escapes the finest filter known and has never been seen).

Other eminent doctors attribute the cause of colds to unclean city streets, to carrying of the germ by cats and dogs, to purely bacteriological causes; and one even blames bedbugs, while another claims that women take cold from powdering their noses too much. There is still another theory, that colds start with a disturbance of the heat-regulating mechanism of the human body.

The predisposition to catching cold can be either congenital or acquired. The acquired may be permanent or temporary. If a predisposed person is chilled for a considerable period of time, there occurs, first, a contraction of the blood vessels of the skin and of the respiratory-tract mucous membranes. This is normal, but if the blood vessels do not relax within twenty minutes and allow the blood to flow back into these membranes, it is abnormal. This long period of greatly reduced blood circulation reduces the defense against bacteria always present on the mucous membrane, and when these bacteria or the filtrable virus gain the upper hand, inflammation occurs, i. e., a cold results.

Colds may also result from the congesting action of dry hot air, of certain gases, or of dust; and there is much evidence that susceptibility to acquiring colds is influenced by the state of the nervous system and of the mind.

The heat-regulating apparatus of normal persons may be put out of action temporarily by a fall into ice-cold water, by alcohol or narcotics, and under such conditions they may "catch cold." A draft of air that is not felt is particularly dangerous because it does not excite the heat-regulating apparatus to action.

While there is no doubt that the predisposed person can so train his blood vessels, by being much in the open air, that they learn to react to cold in a normal manner, it would be very much better for this hardening process to be carried on under the direction of the family physician.

Extensive research work has been conducted for the past eight years. But the common cold remains almost as mysterious a disease as sleeping sickness and cancer, and, as yet, its cure and cause have not been found. Overeating, indigestion, constipation, poor ventilation, irritation of the mucous membrane of the nose and throat due to smoky or dusty air, fatigue, lack of out-door exercise, and loss of sleep, are often referred to as the main causes of colds.

While the definite cause of a common cold is not known, we do know that a cold is infectious and is now widely believed to be caused by a filterable virus or invisible germ. This invisible germ which causes you to catch cold, may enter your nose and throat from the air when an infected person talks, coughs, or sneezes. You may catch cold by kissing or by using an unwashed glass, spoon, or fork, which has been used by someone with a cold. The germs may be on your hands because you have shaken hands with someone with a cold or have touched something which has been handled by a person with a cold. A soiled

handkerchief of the individual with a cold is a constant menace, particularly if the secretions have dried and can float around in the air.

The great Dr. Johnson poked fun at a Scottish historian who noted that the inhabitants of the Scottish island of St. Kilda went through the winter without colds and developed them only in the spring (when mainlanders came over). We now know that small colonies of people, when completely isolated from the outside world, are completely free from colds as long as they remain isolated, no matter to what extremes of exposure and cold they are subjected.

In a recent study of the common cold in an isolated arctic community, it was noted that there was an almost total absence of disease of the upper respiratory tract until forty-eight hours after the arrival of the first boat in the spring. Then, within a week, 25 per cent of the inhabitants were stricken. No significant change in the type of bacteria of the upper respiratory tract could be demonstrated at this time.

Today, almost everyone believes that colds are infectious, i. e., caused by germs. You can sit in wet clothes by an open window in January and, if there are no cold germs present, you won't catch cold. The chances are, however, that cold germs are present, and in your own nose and throat. Most people in large communities carry a quota of cold germs with them all the time. When their resistance is lowered by wet feet or by exposure, they succumb to the germ and "catch cold." It is the germ which causes the cold, however, not the wet feet.

PREVENTION

1. Avoid people with colds. During flu epidemics it is wiser to stay at home than unnecessarily be part of a crowd in poorly ventilated rooms, street cars, or meeting places.

2. Sleep eight hours at least, with windows open in winter and summer. Cold air is not necessarily fresh air.

3. Get plenty of fresh air, but avoid drafts. Live and work in well-ventilated rooms. It is better for the thermometer to read 68 degrees than over 70. Overheated rooms cause more colds than underheated. Windows should be opened at least twice a day, even during the winter, for complete change of air. Colds are due to foul, stuffy air, with the germs which such air is almost certain to contain, rather than to cold pure air. If there are dust or fumes where you work, wear a mask, if possible—at least clean out your lungs with fresh air for a few moments at your lunch hour or when walking part of the way to and from work.

4. Practise deep-breathing exercises.

5. Eat nourishing food. Avoid overloading of the stomach (particularly by fat meats, gravies, fried foods, richly spiced foods and rich or sweet desserts). The addition of high concentrations of vitamins A and D to the diet does some good.

6. Keep your bowel movements regular.

7. Drink plenty of liquids, including milk and fruit juices. Drink at least six glasses of water a day.

8. Take plenty of exercise, indoors and out-of-doors in the sunshine, every day.

9. Avoid undue fatigue.

10. Brush your teeth at least twice a day. Wash your hands before eating and do not put fingers in nose or mouth.

11. Keep the nasal passages clean and moist. If necessary, use some sort of mild spray or douche.

12. Bathing each morning with water cool enough to give a healthy glow after the rub-down, is a good practice. Cold baths, massage, and vigorous rubbing, will harden the skin to resist variations in temperature. If cold water is too much of a shock at first, the temperature can be lowered a little each day.

13. Wear sensible clothing. Wear enough clothes to be comfortable. In this day of overheated houses, offices, and shops, it is better to put on extra wraps when going out of doors than to wear heavy underwear all of the time. Winter shoes should have thick soles, and rubbers should be worn on rainy days. Wear wool stockings in winter.

14. Breathe through your nose. Air is filtered as it passes through the nose on its way to the lungs. The mouth breather takes dust and germs directly into his throat. If you have trouble breathing through your nose, see your doctor.

15. Have diseased tonsils, adenoids, or bad teeth removed. Make sure there are no obstructions or infections in the nasal passages.

16. Keep your feet dry. An extra pair of shoes and stockings kept at your place of work will add to your health and comfort when you are caught without rubbers. Rubbing the feet briskly with a rough towel will help you keep from taking cold from wet feet.

17. Cool off gradually. If you are perspiring, an electric fan or a cool breeze may start a cold.

18. If you keep on taking cold in spite of taking care of yourself, see a doctor. If you take cold often, if colds hang on, if you have a persistent cough, your health needs watching. The proper treatment of colds will prevent much sickness and many deaths from influenza, pneumonia, and other serious diseases.

The consensus of medical opinion is that at present no one has any right to proclaim on scientific grounds that he has any means of warding off a cold. But man, and especially man with a cold, lives in hope. At present there are four more-or-less scientific means of preventing colds: vaccination, ultra-violet rays, chlorine, diet. Each of them has its supporters, its detractors, its triumphs and its failures.

Cold vaccines are of two types: autogenic and stock. Both are made up from the eight bacteria which seem to play a secondary part in causing colds. In the autogenic type, the bacteria are taken from the nose and throat of the individual who is to be vaccinated. Though such vaccines are theoretically superior, they are considerably more expensive. Stock vaccines, whose bacteria are garnered from any handy nose and throat and laid away till wanted, are prepared by the drug manufacturer. There are several high hurdles which must be taken before vaccination-for-colds can approach success. The consensus of medical opinion today is that vaccines have little value.

The use of artificial sunbaths and ultra-violet rays, in preventing colds, has aroused considerable skepticism in the medical profession. Hereto, the general opinion is that there is no special merit in them. However, Drs. Smiley and Maughan, at Cornell University, make the sun lamp a cornerstone of their extremely effective cold-prevention class. They think it tones up the skin capillaries so that the patient becomes hardened to drafts, but they do not depend upon sunbathing alone, nor do they claim more for it than that it keeps the patients interested in the cold class.

While the influenza epidemic of 1918 was raging, cold students noted one minor fact with major interest: workers in plants where chlorine gas was much in the air were practically immune to the disease. The war had already taught a few alert army doctors that chlorine gas not only kills men but also gives them relief from colds. Ever since, there has been a small but earnest school of chlorine inhalationists. Chlorine inhalation became a fad and swept over the country five or six years ago, but the "chlorine parlors" run by amateurs were long ago suppressed as much too dangerous.

Scientific medicine regards chlorine with the special skepticism which it reserves for treatments which have once been fads. There is only one experiment of any scientific standing and it will require further investigation to determine the value of chlorine used in the treatment of colds.

The researches of Valmora's Dr. Volney S. Cheney and of Cornell's Drs. Smiley and Maughan, led them to believe that colds result from an acid condition of the body. To overcome this, they prescribe various alkalies—among them, bicarbonate of soda—and diet.

There are certain general rules for eating which are unanimously accepted by cold students. To ward off colds, everyone agrees, you should get plenty of vitamin A, which is found in orange juice, tomato juice, codliver oil, haliver oil, viosterol, prunes, spinach, carrots, and other depressing foodstuffs. Also get plenty of vitamin B, which plays the part of alkaline pills in combating acidosis. Vitamin B occurs in whole cereals, fruits, nuts, and vegetables. Very little candy and sweetstuffs and very much water (at least six full glasses daily) are also advised.

This sort of dieting is a cornerstone of the New York Federal Reserve Bank's extremely effective anti-cold measures. By making use of diet, sunbaths, and inoculation, and sending home snufflers with any trace of fever, the bank has come closer to whipping the cold problem than any other large downtown office. A recent grip epidemic showed a seven per cent peak, as against a peak of from fif-

teen to twenty-five per cent in the rest of the Wall Street District.

The Federal Reserve diet, like the diet urged on Cornell students by Dr. Smiley, is alkaline, non-fatty, non-carbohydrate, strong in fruits, vegetables, and fluids.

Whatever the cause of colds, colds are a disease and human beings are more susceptible to disease when "run down," below par. Hence it is obviously sound practice to keep in good condition to avoid taking cold. At present, the most effective preventive is the isolation of persons suffering from a cold. Dr. Britton, chief surgeon of the International Harvester Company, who is also a member of the Valmora staff and is one of Chicago's leading chest specialists, states that the greatest single thing to be done to stop colds would be to send home anyone showing up at work or school with a running nose. No one ever got a cold by himself. One catches it from some cold carrier by being breathed upon, sneezed upon, or coughed upon. Until the innocent bystanders rise up and bodily eject the snifflers and sneezers from school, office, theatre, and restaurant, until bed becomes the only place where a cold carrier can peaceably exist, the American people will continue to catch some 100,000,000 colds every winter.

TREATMENT

One of the doctors engaged in research upon the common cold, when asked what he did for his colds, replied gruffly, "I go to bed and use two dozen soft linen handkerchiefs." This would indicate that our knowledge of the treatment of a cold is limited. We all know that there is no specific for the treatment of colds and until the specific causative factor is discovered, the treatment will remain essentially symptomatic.

One of the main symptoms of a cold is an acid condition of the body. To counteract this acidity, fruit juices and alkalies are used. Another prominent symptom is congestion of the lining membranes of the nose, throat, and bronchi. To relieve this internal congestion, free catharsis is produced and thus the blood vessels of the congested area are emptied by lowering the blood pressure, the fever is reduced by various means, and the blood is brought to the surface of the body and perspiration produced. These procedures help when one has a cold, but let me repeat again that no doctor can cure a cold at present. All that we can do today is to prevent infection, sometimes to abort a cold, to relieve suffering, and to shorten the length of time that a cold lasts.

OUTLINE

A. Measures that have Value in all Stages of a Cold.

1. Rest in bed, for a day or so. There is no question but that staying in bed is the closest we have come to finding a panacea. Everyone, from your grandmother to the president of the American Medical Association, agrees that bed is the place for one with a cold.

2. Take some mild laxative—the salines are best: epsom salts one-half ounce, or one to four drams, magnesium citrate, twelve ounces (one bottle).

3. Produce free perspiration by taking a hot general bath, a hot foot bath, or a Dover's powder. As soon as you have rubbed yourself dry, cover up in bed with two extra blankets so that you can sweat the cold out of your system. To help you sweat, take a hot drink such as hot lemonade or a hot "toddy" of whiskey, sugar, and hot water. Brandy or whiskey with a small cupful of hot black coffee or tea is also very good. These not only help you to sweat, but relieve the general body weariness and the feeling of apprehension common to a cold. A word of caution: overindulgence in alcohol will lower the resistance and pave the way for pneumonia.

4. During a cold the blood tends to be less alkaline than usual. To combat this acidity, take one teasoonful of sodium bicarbonate, (baking soda) in water or lemonade every four hours. In addition, take phenacetin, or aspirin, grs. V., with the soda to relieve discomfort. Repeat every three or four hours if necessary.

5. Eat lightly of simple, nourishing food. Nothing could be further from good advice than "feed a cold and starve a fever." A cold is a fever, the inflammation being localized in the respiratory mucous membranes. Overloading the stomach is harmful, and meats, gravies, fried stuff, and richly spiced foods are especially to be avoided. Plenty of cold water, milk, and fruit juices are advisable. Take at least one-half glassful every hour while awake. According to recent research, the addition of

vitamins A and D apparently are not of much help, but are worth trying.

6. Gargle with warm salt water and soda three to four times daily. A teaspoonful of ordinary table salt and one-half teaspoonful of baking soda to a pint of water is an ideal mixture. This can also be used as a nasal douche.

7. Avoid any exposure to cold. Cold baths, cold showers, and strenuous exercise are valuable hardening methods in the intervals between colds, but should be stopped while one has a cold.

8. Smoke and cold damp air should not enter the respiratory tract.

9. Isolation is desirable, as it protects others and lessens chances of catching something else while your resistance is low.

10. Blow your nose properly and as little as possible, or you may get mastoid or sinus infection, for 10 per cent of all colds develop sinus trouble. Hold your handkerchief over the bony bridge of the nose so as not to constrict the nostrils. If the nostrils are compressed, the air pressure is increased and the discharge may be blown into the sinuses, middle ear, or the eyes. When the laborer puts his thumb over one nostril and blows out the other, he is very apt to spread the discharge from the compressed side to the sinuses, ear, and eye.

B. The Beginning Cold. In addition to the ten measures listed under A, try to check the infection by local application in the nose and throat of 20 per cent argyrol, or a 1:5000 solution of metaphen merthiolate, hexylesorcinol, or any other mild antiseptic. A few drops are introduced into each nostril with a medicine dropper and allowed to trickle back through the nose until the whole naso-pharyngeal mucous membrane is well covered. Do not blow the nose, but absorb any excess discharge with gauze, so as to keep the solution in contact with the membranes as long as possible. This procedure may be repeated several times a day.

C. The Second Stage of a Cold. In the second stage, when there is a profuse watery discharge, the inhalation of some soothing preparation is often very beneficial. A mixture of thymol, menthol, eucalyptol, and mineral oil, inhaled from an atomizer, is soothing and healing. The steam inhalation of tincture of benzoin and the oil of pine needles, helps the same way. (With the latter mixture the housewife should be forewarned that it is difficult to clean the utensils used.) A teaspoonful of the above mixture is put in a teacup and filled with boiling water. The face is placed low over the cup at once, with the entire head and cup covered with a towel. Inhale deeply for a few moments through both nose and mouth, and be careful to avoid exposure for at least one hour after this treatment.

D. The Third or Last Stage of a Cold. In the last stage of a cold, when the discharge has become thick, alkaline antiseptic solutions used locally as a douche are beneficial. A teaspoonful of boracic acid added to the salt and soda solution usually proves sufficient. It should be snuffed into the nostrils from the hand, from an atomizer, or from a nasal douche.

E. Other General Measures That May Be Tried. The vaccine treatment for recurrent colds helps only in prevention or prophylaxis, and works only in a small percentage of cases. Even though it is the consensus of medical opinion that there is no scientific foundation for the now popular vaccine treatment of colds, and that the occasional good results are due to coincidence, the vaccine treatment is worth trying.

The chlorine treatment of colds was frequently found to be helpful in simple, uncomplicated cases, when used in the first stage. When tonsils or sinuses were involved, this treatment had little effect.

Do not return to work until your cold is over. If the cold hangs on after two weeks, or if there is any question as to whether it is an ordinary cold or not, consult your family doctor.

Last week, Dr. Diehl of Minneapolis reported having been successful in treating colds by using morphine, codeine, papaverine, and other opium extracts. He claims to have cut in half the time that a cold lasts and to abort it completely in some cases. This method of treatment will need further investigation before universal adoption and may prove to be very valuable. Like vaccines, chlorine, and so forth, it will have to be used under the supervision of your family doctor.

CONCLUSION

The common cold is being recognized more and more as exacting a terrific toll in suffering and money each year, and as the cause of many more serious complications and diseases.

Many researchers have attacked the cold problem, but, it must be regretfully confessed, so far without any results.

The specific cause of a common cold is not known, but it is thought to be infectious, due to a filterable virus.

The absolute prevention on scientific grounds is not possible at present.

The treatment as outlined is designed to prevent infection, to abort the cold if possible, to relieve suffering, to shorten the length of time that a cold lasts, and to prevent the occurrence of complications.

From the outline presented, it is apparent that there is no simple or specific treatment of the common cold, unless it be the dictum: "Stay in bed!" for staying in bed will not only cure your own cold, but will also prevent your spreading it to others.

There is an old cynical medical joke which will still hold good until a great deal more is known about the cause and treatment of the common cold, and that is, that "an untreated cold lasts fourteen days, while a treated cold can be cured in two weeks."

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PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

DIABETICS STILL DIE

That such a revolutionary discovery in medicine as the discovery of insulin should have made so little impression on the death rate of that disease for which it is specific, is to me a never-failing source of astonishment. The easy explanation is that insulin is not a cure for diabetes. This does not impress me. Insulin is capable of preventing death from diabetes and if death from diabetes is postponed long enough the patient will surely die of something else. It is true that, when diabetes is recorded on a death certificate as one out of two or more causes of death, the statisticians will classify the death as due to diabetes (since they must choose **one** cause for statistical purposes) in preference to such causes as influenza, measles, dysentery, rheumatic fever, diseases of the heart, the pneumonias, and some others. But there remain 127 ways is which the diabetic can die without any chance of diabetes taking the statistical blame. Note, for example, that if a patient dies from diabetes and tuberculosis, tuberculosis takes precedence as the cause of death.

A more plausible excuse is given by Dublin[1] when he says: "The use of insulin has served to increase the number of cases after age 45, and in this way has helped to shift the mortality from the younger ages to the older ones." This does in fact explain that, while the death rate from diabetes has been increasing at ages over 45, it has been decreasing at ages under 45. But it does not explain away the distressing fact that at all ages (taken together) the death rate of diabetes is still steadily increasing. A generation ago diabetes was twenty-first among the causes of death; today it stands tenth.

Then there is the explanation offered by Bolduan[2] "that the increase, during the past 30 or 40 years, in the diabetes mortality in the various age groups, finds an adequate explanation in the more frequent recognition of the disease in recent years." Is this the answer? Has diabetes always been tenth among the causes of death and we have only just found it out? It has been possible to detect sugar in human urine since 1842, and Fehling's quantitative test for sugar has been available since 1848. Yet, says Doctor Bolduan, routine urine analysis for sugar was not introduced into the New York Hospital until some time between 1880 and 1890; and, he adds, "undoubtedly the general practitioner lagged far behind." Perhaps Anyhow the general public lags far behind the general practitioner. In New Mexico we have a relatively low death rate from diabetes. But here no less than one-third of our deaths take place without medical attention. When this third of the population receives medical attention there can be no doubt that the number of diabetes deaths will appear to increase.

But when all is said and done, it is still hard for me to avoid the conviction that since 1921, when Banting discovered insulin, a lot of people have died from diabetes who ought to have died from something else.

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COMING MEETINGS

Of particular interest, and immediately ahead of us, is the Southwestern District Conference of the American College of Surgeons, which will be held in Phoenix on March 16 and 17. Complete program will be found elsewhere. Partly because the meeting will immediately follow the much larger California conference, an unusually large and eminent group of surgeons will be at the Phoenix conference. Surgeons from over the Southwest will certainly not wish to miss this meeting and program. The medical profession of the Southwest have been trying for years to establish that district as an entity; for this purpose the Medical & Surgical Association of the Southwest was conceived. When the district conferences of the College of Surgeons were started, effort was made to enlist their cooperation in consolidating and welding together the medical profession of western Texas, New Mexico and Arizona. The College has been feeling its way carefully in this matter, first including El Paso with the balance of Texas, then trying out New Mexico and Colorado, and this year they proposed to include Arizona with California. However some of the Fellows of the College in Arizona objected to this, and, with Dr. Franklin Martin's influence to support them, the forthcoming District Conference was planned. Should this meeting prove an outstanding success, it will go far toward establishing the "Southwest District" as a geographical and professional entity. It is, therefore, important that it be supported enthusiastically.

The New Mexico meeting will be held in Las Vegas during May, the exact dates not being known to this office at the time of going to press.

The Arizona state meeting will be in Prescott early in June, and plans are already under way for an outstanding program. It will be very agreeable to have this meeting somewhat later, immediately preceding the national meeting.

The American Medical Association will be held in Cleveland in June, with a week's interval between it and the Arizona meeting.

Watch for full details of these meetings in later issues of this journal.

PROGRAM

Friday, March 16, 1934

REGISTRATION AND INFORMATION—
LOBBY, HOTEL WESTWARD HO

CLINICS
9:00—12:00 a. m.
Good Samaritan Hospital
St. Joseph's Hospital

HOSPITAL CONFERENCE
Main Dining Room, Hotel Westward Ho
9:00—12:00 a. m.

Round Table Conference and Discussion of Administrative, Professional, and Economic Problems: Conducted by Robert Jolly, Houston; Superintendent, Memorial Hospital, Malcolm T. MacEachern, M. D., Chicago; Associate Director American College of Surgeons, and Director of Hospital Activities.

MEDICAL MOTION PICTURES
Main Dining Room, Hotel Westward Ho
12:30—2:00 P. M.

Presented by Malcolm T. MacEachren, M. D., Chicago.

HOSPITAL CONFERENCE
Main Dining Room, Hotel Westward Ho
2:30—5:00 P. M.

Administrative, Professional, and Economic Problems of the Members of the Medical Profession, Trustees, Hospital Executives, and Others.

MEETING OF FELLOWS
Main Dining Room, Hotel Westward Ho
5:00—5:30 P. M.

Business Meeting of Fellows of the American College of Surgeons—Election of State Executive Committees for Arizona, and New Mexico.

COMMUNITY HEALTH MEETING
Phoenix Union High School
8:00 P. M.

Winfred Wylie, M. D., Phoenix, Chairman, Arizona State Executive Committee, Presiding.

THE AMERICAN COLLEGE OF SURGEONS—ITS MESSAGE TO YOU:
Franklin H. Martin, M. D., Chicago, Director General, American College of Surgeons.

CANCER—IT IS A CURABLE DISEASE:
Robert B. Greenough, M. D., Boston, President-Elect, American College of Surgeons.

SCIENTIFIC MEDICINE—ITS HISTORY:
Howard C. Naffziger, M. D., San Francisco; Professor of Surgery, University of California Medical School.

PROGRESS OF MEDICAL SCIENCE:
Allen B. Kanavel, M. D., Chicago; Professor of Surgery, Northwestern University Medical School.

SAVING YOUR EYESIGHT:
Edward H. Cary, M. D., Dallas; Professor of Ophthalmology and Otolarynology, Baylor University College of Medicine.

PERIODIC PHYSICAL EXAMINATIONS:
Thomas M. Joyce, M. D., Portland; Associate Clinical Professor of Surgery, University of Oregon Medical School.

SINUSITIS—ITS CAUSES AND PREVENTION:
Gordon B. New, M. D., Rochester; Professor of Rhinology, Larygnology, and Stomatology, Mayo Foundation.

ENCOURAGEMENT OF CANCER PATIENT:
Charles A. Dukes, M. D., Oakland; Vice-President-Elect, American College of Surgeons.

DOCTORS, PATIENTS, AND HOSPITALS:
Robert Jolly, Houston; President-Elect, American Hospital Association.

GOOD HOSPITAL CARE—Talking Motion Picture:
Presented by Malcolm T. MacEachern, M.D., Chicago; Associate Director, American College of Surgeons.

Saturday, March 17

CLINICS
9:00—12:00 A. M.
Good Samaritan Hospital
St. Joseph's Hospital
10:00—12:00 A. M.

CANCER CLINIC
St. Joseph's Hospital
Robert B. Greenough, M.D., Boston.

HOSPITAL CONFERENCE
Assembly Room, Good Samaritan Hospital
9:00—12:00 A. M.

Demonstrations and Round Table Conference dealing with departmental activities and various phases of Hospital Standardization and Administration: Conducted by Robert Jolly, Houston;

Convention Headquarters

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MEDICAL MOTION PICTURES
Main Dining Room, Hotel Westward Ho
12:30—2:00 P. M.

Presented by Malcolm T. MacEachern, M. D., Chicago.

SCIENTIFIC MEETING
Main Dining Room, Hotel Westward Ho

Treatment of Tuberculosis of Tendon Sheaths:
Allen B. Kanavel, M. D., Chicago; Professor of Surgery, Northwestern Univerty Medical School.

Topic speaker to be announced later.

Results in the Treatment of Carcinoma of the Breast:
Thomas M. Joyce, M. D., Portland; Associate Clinical Professor of Surgery, University of Oregon Medical School.

Topic speaker to be announced later.

The Cervical Rib Syndrone with and without Cervical Ribs:
Howard C. Naffziger, M. D., San Francisco; Professor of Surgery, University of California Medi- School.

Topic speaker to be announced later.

SCIENTIFIC MEETING
EYE, EAR, NOSE AND THROAT
Conference Room A, Mezzanine Floor
Hotel Westward Ho
2:30—5:30 P. M.

Ocular Manifestations of Nasal Origin:
Edward H. Cary, M. D., Dallas; Professor of Ophthalmology and Otolaryngology, Baylor University College of Medicine.

Concerning a Study of Retinal Vascular System:
D. F. Harbridge, M. D., Phoenix.

Tumors of the Pharynx and Larynx:
Gordon B. New, M. D., Rochester; Professor of Rhinology, Laryngology, and Stomatology, Mayo Foundation.

Topic speaker to be announced later.

HOSPITAL CONFERENCE
Nurses' Class Room
St. Joseph's Hospital
2:00—5:00 P. M.

Demonstrations and Round Table Conference dealing with departmental activities and various phases of Hospital Standardization and Administration: Conducted by Robert Jolly, Houston; and Malcolm T. MacEachern, M. D., Chicago; assisted by Sister M. Monica, Superintendent, and heads of departments.

SCIENTIFIC MEETING
Main Dining Room, Hotel Westward Ho
8:00—10:00 P. M.

Treatment of Cancer of the Breast:
Robert B. Greenough, M. D., Boston; Consulting Surgeon, Massachusetts General and Collis P. Hunting Memorial Hospitals.

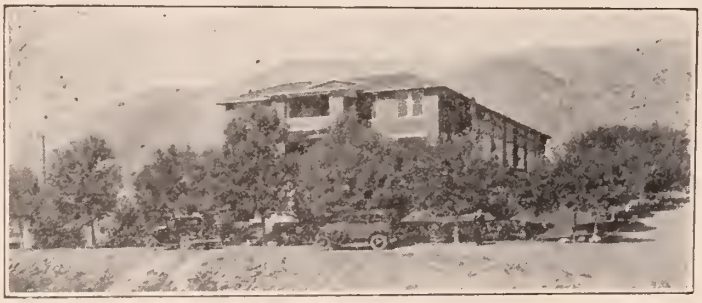
Small Intestinal Tumors:
Thomas M. Joyce, M. D., Portland.

Practical Considerations in the Prevention of Defects in the Skull and Their Repair:
Howard C. Naffziger, M. D., San Francisco.

Teleplasms Within and Around the Eye:
Edward H. Cary, M. D., Dallas.

Current Problems in Reconstructive Surgery of the Face:
Gordon B. New, M. D., Rochester.

Chest Surgery and the General Surgeon:
Charles A. Dukes, M. D., Oakland; Chief Surgeon, Alameda County Hospitals, West Division.



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THE WOMAN'S AUXILIARY TO THE ARIZONA STATE MEDICAL ASSOCIATION

MRS. J. C. WILSON
Willcox, Ariz.

The National President's letter in the December issue of the A. M. A. Bulletin overflowed with items of interest to every Auxiliary member and friend. Mention of the splendid activity of the Idaho State Auxiliary and the Oregon Auxiliary is made and in giving outline of the annual meeting of the National Auxiliary in Cleveland, Ohio, in June, the President laments the fact that there is no state auxiliary to work with. She brings to our attention the porgram of work under the direction of Dr. Martha Elliot, director of the Division of Child and Maternal Health, Children's Bureau, United States Department of Labor, who is traveling from state to state in the interest of the child health recovery program. This, as well as many Federal plans, should be studied by the Auxiliary so that our knowledge of them may be first hand. Our attention is called to the article on amebic dysentery which was published in the Journal of the A. M. A. of November 18th, and we are advised to read it and be ready to talk intelligently on that subject.

When we read that in Arizona, alone, deaths from automobile accidents during the month of December numbered 21, it should bring to us the outstanding need for some active program of safety.

The Pima County Auxiliary held its annual meeting recently and elected officers and heard reports of the officers telling of the work of 1933. This was a real fine meeting with much interest.

We sympathize with Dr. John Hagan of Miami, in the death of his wife, Julia Purcell Hagan, a native of Arizona.

It is hoped that next month will have more news and the Press Chairman asks you to please let her have information regarding your accomplishments.

Since writing the above another News Letter has been received from our national officers. Speaking of membership, our President, Mrs. Blake, says: "To have a highly successful meeting (national convention) we must needs have delegates in large numbers, and to accomplish this there are several things to be done. First, we need to reinstate our delinquents. We need them and we are equally certain they need us. Second, every eligible woman who has not yet joined should be given a chance to know the delightful social experiences and the important opportunities, in becoming a unit in the ranks of this great reserve army, that she is missing."

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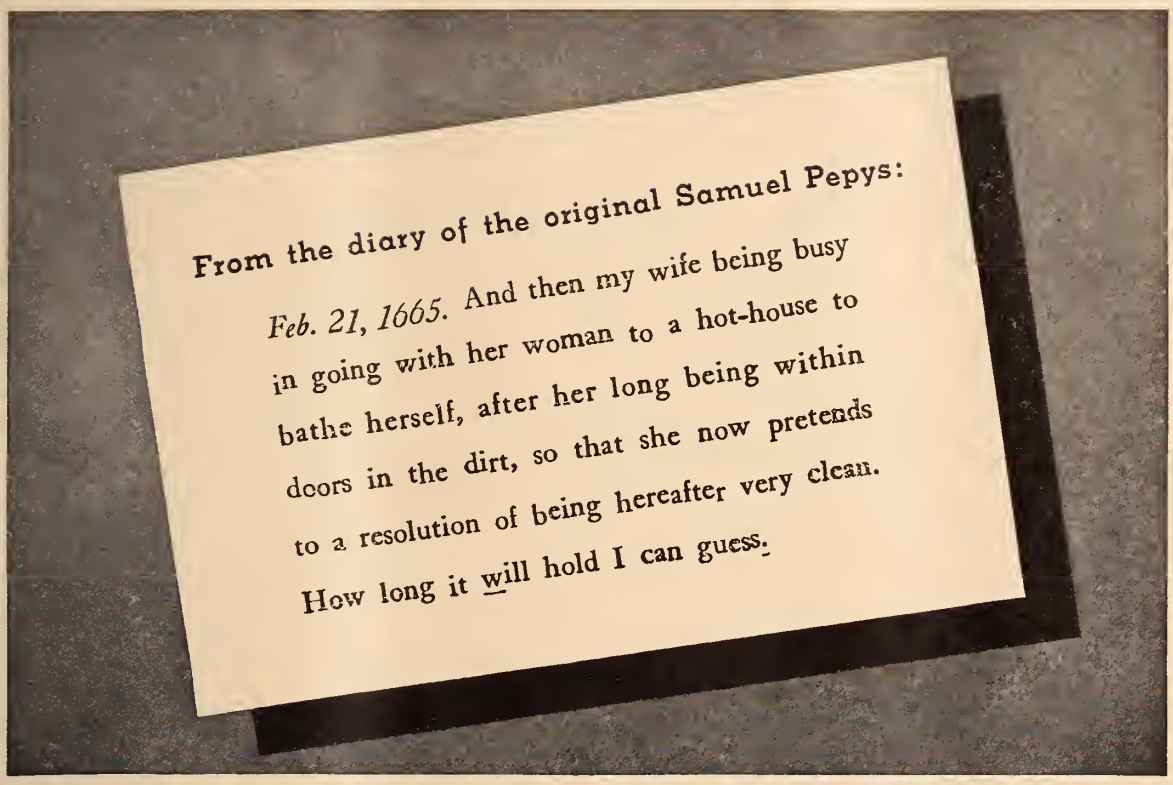
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THE CRIPPLED HAND

CURT VON WEDEL, M. D.

Oklahoma City, Okla.

(Read before the New Mexico Medical Society at its Fifty-first Annual Meeting, Roswell, N.M., May 18-20, 1933).

Deformities of the hand constitute one of the very serious catastrophies that befall mankind. Next to permanent brain injury and blindness, serious loss of the use of the hands does more to incapacitate one in our social life than probably any other single factor. We are going to sketch briefly in this talk, some of the more common conditions, which can be easily remedied. For purposes of presentation, we will divide them into several classes.

CONGENITAL DEFORMITIES

(a) The Supernumerary Finger, that is, the extra little finger and the extra thumb. We operate these cases as soon after the tenth day as possible so that the baby may develop that finger which is left. It is very difficult to state which of the fingers to remove, or which thumb, but it is usually best to remove the external finger or thumb, because they are usually not as well developed. There are usually present two facets on the metacarpal bone, which should be left alone. The extra tendon, which is always present, should be sutured into the remaining tendon so we may have complete development of the muscle, rather than atrophy of half of the muscle. These operations require exceeding care in detail, but if well done, bring very brilliant results.

(b) The Web Fingers (Syndactylsis). This is one of the oldest operations in surgery. The old procedure was to split the skin from one finger on the palmar surface, the other finger on the dorsal surface, and then wind the resulting flap around its finger. This bettered the condition but never cured it. Likewise, in most of these cases the terminal phalanx is as one, being firmly united with its mate at its side. Normally, as the base of the web is square, there was never skin enough to make up for this space, resulting in a very incomplete condition. By far the most efficient way to treat this condition is to cut the web right down through the middle just as far as one can, until the ligament is reached; this leaves a good thick skin on the palmar surface as well as the dorsal surface and leaves the denuded area between the fingers. We then place a full thickness graft on the denuded area. Later, by special operation, the base is squared, which will insure a full deep web, allowing for complete abduction.

DUPUYTREN'S CONTRACTURES

The So-Called Dupuytrens Contracture: The cause of this contracture is unknown. We know that it is mostly in older men and in persons who have a tendency to lay down fibrous tissue. It is one of the most disabling conditions one can imagine, because it usually starts in the index or the little finger and is followed by a gradual and increasing contracture until the fingers are forced down on the palm. There have been various methods devised to cure this condition, but the original discussion by Dupuytren in which he states all the palmar fascia must be removed and the whole skin must be thoroughly mobilized, still holds true. The best incision is one made along the edge of the palm on a line between the little and third finger, then carried across towards the index finger at the uppermost crease. This whole flap is thrown back and the palmar fascia completely removed. Because frequently many of these cases have been operated previously, or because the skin

has become thoroughly hardened, it may be necessary to remove some of the skin. This should be replaced by a very loosely fitting full-thickness graft. Following this extensive removal, x-ray will help to prevent the reformation of fibrous bands from tissue which may not have been completely removed. We have operated some fifteen of these cases, several of which had been previously operated, but not completely. We have obtained unusual results on those cases where we have been very radical, but when we have tried to be conservative in the removal of the fascia, we have always had recurrence.

TRAUMATIC DEFORMITIES OF THE HAND

Infection following deep palmar abscess. There is probably no phase of reconstructive surgery that is so difficult and so baffling as reconstruction of tendons which have been destroyed by infection. This is because, not only is the tendon destroyed, but the tendon sheath, the nerves, and all the fatty tissue is gone, and whatever little string of tendon may be left, is imbedded in thick hard fibrous scar. We never attempt surgery on these hands until we are certain, beyond all measure of a doubt, that every bit of infection has subsided. Before we do an open operation, we mobilize them under gas and thoroughly massage them; if they then do not break down or flare up, we allow two weeks to pass, when it is usually safe to attempt it. The procedure in these cases always depends on the amount of destruction and the extent of the involvement. One incision is usually enough, because at best the blood supply is extremely poor. We get beyond the area of destruction and follow every tendon down into the mass on both sides, and then try carefully to separate whatever is left. We make no attempt in these extensive cases to separate the superficial from the deep tendons if we get some reasonable amount of flexion.

When we have separated or built up our tendons, it is best to take some fat from the arm or from the abdomen and surround them. One must be very careful, as this fat has a tendency to break down. The wounds are drained and then the hand is dressed with sponge pressure, to leave no space for a collection of serum. The hand is left at rest for about one week, and then passive motion and massage are instituted. We are never very enthusiastic about these conditions and frankly tell patients they should be thankful for any little motion they get. If we get sufficient motion to allow the patient to dress himself, we have done much, because, with restoration of the prehensile factor of the hand, we have given him that one outstanding attribute which differentiates the human hand.

Burns in Children. Another serious trauma causing crippled hands, results in contractures following deep burns. Deep burns destroying the palm of the hand in adults are comparatively rare. These are much more common in children. We have had many cases where children have had the palms of one or both hands destroyed by gripping hot objects, with a resulting destruction of the palmar skin and some of the palmar fascia. This is the most frequent type of burned hand we encounter among children. These cases can be brilliantly restored by a simple yet technically difficult operation. All the scar tissue is carefully resected, a careful pattern is made and a full thickness graft is cut from the abdomen and carefully sutured in place. The ends of the fingers are sewn palm upward to hardware cloth and even pressure is instituted. In this manner the palm is restored with a thick pliable skin. We have had some brilliant results with cases of this type in children from six months to eight years of age. To use a pocket flap is a very difficult procedure in children, because of the difficulty in dressing, the difficulty of holding the hand in situ and trouble with infection. They simply will not keep the hand at rest, and then, too, whereas the first procedure can be accomplished with ten days' hospitalization for out-of-town patients, and one day hospitalization for in-town patients, with not to exceed six dressings, the second procedure is one of three or more operations with weeks of hospitalization and untold numbers of dressings, with the result not nearly so satisfactory. When one knows the technical difficulty of the first procedure, and understands it, the end result is practically assured.

Burns in Adults. In adults the procedure with burns on the palms of the hand is much the same as in children. By using the heavy skin of the back, we can give one practically as tough a palm as before the injury. In removing the skin, one must be careful not to take away the skin over the spinous process,

because the resulting scar is often painful. One should go one-half to one inch to the side.

Burns on the Back of the Hand. We see a great many hands in which the backs have been burned and a lot of skin has been destroyed, healing having taken place by granulation tissue. This results in a piling up of a lot of fibrous tissue and scar, causing fixation of the hand in extension. These cases can be very successfully treated in a comparatively simple manner, by shaving off the fibrous tissue with a straight razor. The hand is then completely flexed and the area is covered with a thick split graft cut in one piece. The only difficult procedure is cutting the split graft in one piece. This can be accomplished with large thin knife and suction apparatus. The graft is then covered with xeroform gauze and even sponge pressure applied. In a couple of weeks the dressing is removed, and in less than three weeks a half-erythema dose of x-ray is given and this is repeated four or five times. In this connection I will say that I refer these cases to the very best x-ray men available in the community in which the patient lives, and write him most careful instructions never to exceed a half-erythema dose and to use great caution. On one case I lost my graft, due to the careless x-ray. X-ray prevents the reformation of fibrous tissue from the tiny islands which are left, and the consequent recurrence of some of the contractures.

When the burn has been extensive enough to destroy the fatty tissue on the back of the hand and some of the tendon sheath, an entirely different procedure must be used. In these cases we completely resect the scar and all thickened tissue. The thin skin on the upper inner portion of the thigh is used for the graft. An incision is made across the top, and the skin is dissected free, leaving just a little bit of the fatty layer attached. Holes are punched in the lower end of the flap to accommodate the fingers. A split graft is placed underneath the flap on the denuded thigh and the hand is sewn in situ. By placing in the split graft, we cover the denuded area, preventing infection and save two operations. The hand is allowed to remain in situ for three weeks and the flap is gradually cut away under local anesthesia. When both hands are involved, this of course takes five to six weeks or more, and is costly and time consuming, but one cannot otherwise get a movable flexible skin on the back of the hand when all of the fine fatty tissue has been destroyed by the burn. This gives the nicest end result of any of the procedures, as it covers the hand with a skin that can be exposed to the weather, can be barked and skinned without everlastingly breaking down, and neither the cold nor the sun disturbs it.

THE CRIPPLED HAND RESULTING FROM VIOLENCE

Cut Nerves and Tendons. These result from such as automobile accidents, glass injuries, and so forth. The most common are those resulting from being thrown into a windshield and severing the nerves and tendons in the wrist. It has been my lot to have seen a great many of these cases, both early and late. I am leaving this group till last because it is the type of case the average man sees most frequently. These are often the result of auto or bus accidents in which someone falls into a glass, throwing the hand out in extension and the glass cuts the nerves and tendons at the wrist. The hands being held in tension, the cut often goes from radius to ulna, involving everything.

Do not attempt to sew this up in your office alone. Get someone, office girl, relative, or nearest doctor, to administer an anesthetic, because these cuts cannot be correctly sewn up without complete relaxation.

If you do not know your anatomy, get down your book, put it on the table next to you, open at the page showing the tendons and nerves of the hand, and refer to it as you sew up the hand. I have found in most instances that the difficult thing for the men to differentiate is the nerve from the tendon. There are only two nerves of any consequence: the ulnar and the median. The median nerve is directly under the tendon which sticks out when one fully extends the fingers, and is known as palmaris longus. This nerve is usually cut and, inasmuch as it is the nerve of sensation for most of the hand, it is very important. The upper end will not contract, but the lower end springs into the palm. The common instinct is to sew the median nerve into the palmar fascia, mistaking it for the tendon. If you are not sure, make a longitudinal incision into the nerve. You will find it pinkish and vascular. The tendon is white, hard, and has little blood supply. The ulnar nerve lies

deep next to the flexor carpi ulnaris. This is much more easily found as it does not usually retract into the palm. With a book before you (if you do not understand the relationship), the nerves can be carefully approximated, end to end, with fine Number A Corticelli black silk and an ordinary straight needle. These needles can likewise be used for accurate end to end approximation of tendons. One does not need a lot of heavy stuff, because we flex the wrist when we put up the hand, so there is no tension whatever. The main thing is to take your time; it takes hours. I wish to illustrate the following hand, which took me some four hours; namely, from one until five o'clock in the morning. This man had every tendon cut in from three to six places. He is now able to shut his hand sufficiently to grip a steering wheel, to open his hand and button his clothes. One must spend plenty of time, sew accurately, and watch details. It requires a little technical knowledge and, if you are not sure of your anatomy, just put the book before you, chase the family out, follow the pictures, and you cannot go wrong. This same procedure should be followed in transverse cuts of the dorsal surfaces of the hands. I am not going to burden you with technical details or what to do when you see the end result of bad surgery, because one must alter the procedure to suit the individual case.

Simple Fracture of the Metacarpal and Phalangeal Bones. It is too often the practice simply to put these up on a piece of board and let them go, whereas a simple procedure will prevent most disabling deformities. There are two modes of procedure to follow, depending on the type of fracture we have to deal with. The first is to put the hand up by transfixing the terminal phalanx and the nail with No. 22 wire and using a banjo splint with elastic traction. The second is to put the hand up by curling it around a large bandage, thus maintaining constant traction.

Compound Comminuted Fractures. We treat these fractures, with a good deal of destruction of the soft tissue, such as one gets from explosions or when ground up in auto accidents, by swinging them up. Every household has a simple iron bed. There is always plenty of lumber to be obtained, and you can tie an overhead frame to any bed. Transfix the fingers with baling wire or wire from a piano, and swing the hand up so the weight of the arm in flexion will cause traction. It is then easy to irrigate, clean, and to remove from day to day the little sloughing which occurs.

In conclusion, remember one can easily obtain an artificial foot, but never since history began, has anyone been able to make an adequate hand. The hand is the most complicated piece of mechanism in all the world. The flexion, extension, abduction, adduction, the thumb and finger motion, with all the little delicacies which accompany it, cannot possibly be replaced.

It then behooves us to do everything we can to save the functions of the hand to the greatest possible extent.

DISCUSSION

DR. FRANK C. GOODWIN, El Paso, Texas (opening): I have enjoyed Doctor Von Wedel's wonderful paper very much and do not believe that I can add anything to it, as his subject has been covered so clearly and so concisely. I believe we should have more instruction on immobilization and on the treatment of fractures. The colleges graduate men every year, yet we seldom see any of the young graduates who have any idea of the use of plaster of paris bandages either in the application of casts or in the preparation of the bandages themselves.

DR. EARL McBRIDE (Oklahoma City, Okla.): As Doctor Von Wedel comes from my home town, naturally I want to back him up, and especially when he is doing such excellent technical work as has to be done in these cases. His work is very thorough and we think a great deal of Doctor Von Wedel back home. After his work is done we see results, wonderful results, that did not seem possible, and we then realize that the secret of success is attained by attention to details, and this Doctor Von Wedel gives to the nth degree.

DR. VON WEDEL (closing): I just want to say again that the men in the field must attempt to do things. While it takes hours and hours to work out some of these cases, and an infinite amount of patience, yet you can do it just the same and just as well as the other fellow, if you will take the time.

The Merck Institute of Therapeutic Research, Rahway, New Jersey, announces the appointment of Dr. Eugene Maier as Chief Bacteriologist.

Dr. Maier is a graduate of the University of Tuebingen, Wuertemberg, Germany, and completed his studies at the University of Erlangen, Germany

Dr. Maier was associated with the Rockefeller Institute of New York as Research Assistant from 1926 to 1930. Since 1931, up to the time of becoming associated with Merck & Co., Inc., Dr. Maier has been at Bellevue Hospital, New York, in the department of pathology, as bacteriologist for the Tuberculosis Division of Columbia University.

IS OUR PRESENT-DAY KNOWLEDGE ADEQUATE FOR THE CONTROL OF CLINICAL TUBERCULOSIS?

O. E. EGBERT, M. D.
El Paso, Texas.

(Read before the nineteenth annual session of the Medical and Surgical Association of the Southwest, held at El Paso, Texas, December 7 to 9, 1933.)

We are in possession of sufficient knowledge of tuberculosis today to annihilate the infection in a generation. Such an audacious statement must take to its credit many refinements yet to be perfected, as well as careful correlation of facts developed in research not yet properly evaluated.

This statement is not fantastic, though we have to admit that no specific agent has been discovered that will destroy the tubercle bacillus in vivo. When every line of attack on this disease is examined, more skepticism prevails over developing a true specific for the destruction of the tubercle bacillus in the living organism than any of the several other offensive measures.

The time is possibly not far distant when a chemical agent will be found that will do this and yet not destroy the host. But invading organisms that are out in the vanguard, responsible for the spreading and progress of the disease, will continue to be beyond the realm of the blood and lymph circulations, and therefore very likely beyond the reach of a specific enemy.

The broad consensus of opinion is that mastery of this disease lies in utilizing our present knowledge and developing advantageous refinements of it.

I must of necessity pass that great and most important subject of prevention in this discussion. The welfare of all mankind has never been more handsomely served than when proper disposal of tuberculous sputum, elimination of tuberculous milk supply and the isolation of tuberculous patients came into practice. It remains yet to be proved whether or not attenuated vaccines, as developed by Calmette, will produce true and lasting immunity to this infection.

Herein we are considering our present-day knowledge of combating clinical tuberculosis. Miliary tuberculosis and the massive involvement of the non-allergic cases likewise cannot be considered here.

The great percentage of clinical tuberculosis develops in the individuals whose tissue cells are sensitive to the tubercle bacillus and its toxins and who possess some immunity, whether inherent or acquired. For years it has been considered that immunity against the tubercle bacillus and allergy to tuberculo-protein were one and the same. In more recent years, researches seem to prove that they are separate and distinct phenomena. Nature makes an heroic effort to produce immunity against the invading infection and in some way seems to produce a supersensitive state in the cells which we know as allergy, and which is fairly accurately measured by the tuberculin reaction. As we are able to desensitize individual cases sensitive to other proteins, recently it has been shown that tuberculous animals may be desensitized against tuberculo-protein by fractional and progressive doses of tuberculin, and, more significant still, that this desensitization does not reduce the immunity of the animals.

If these conclusions stand the tests, may we not be on the verge of developing what we might term the second great cycle of treatment of this disease? Clinicians have always noted the splendid progress of their cases during the first few months of the hygienic regimen. Then the average case passes into a stage when progress against the disease seems at a standstill. Though the patient is afebril and has gained weight, he develops another syndrome, characterized by spasmodic cough, fits of dyspnea, cessation of sputum drainage, and the consequent acute exacerbation.

May not the development of this syndrome mark the arrival at the supersensitive or allergic state, and may the bronchial reaction be an angio-neurotic edema of the mucosa occluding the bronchial lumina, mechanically obstructing drainage and accounting for the acute illness? If desensitization could bring relief from this syndrome and not reduce immunity, might it not mean progress for the second cycle of treatment that would prove as gratifying as the first?

Many phthisiologists have felt that tuberculin has been shelved as a therapeutic agent only until its action on the tuberculous organism can be better understood. Not only are we coming to know allergy and immunity better, but very gratifying progress has been made in refinements of tuberculin itself.

Koch's old tuberculin is an emulsion of dead tubercle bacilli and it has long been recognized as a crude product, since the bacillus is known to have protein and carbohydrate elements as well as a lipoid or fatty capsule. More recent researches have resulted in separating into the pure state the protein element and the carbohydrate element as well. In fact the carbodydrate element has itself been separated into twenty-some polysaccharides. Tissue cells of this tuberculous organism have a specific reaction to the pure protein element of the tubercle bacillus and to the carbohydrate element as well. It can readily be seen that from these developments we may expect accurately measured tuberculin elements producing accurately controlled reactions.

As a practical working basis, clinicians have considered the early diagnosis of clinical tuberculosis to be the recognition of that stage of the disease that produces low-grade temperature, loss of weight, night sweats and brassy cough. We have failed to embed into our diagnostic armamentarium the consciousness of the long-known clinical fact that there has been an acute onset, commonly termed a bronchopneumonia, that has preceded this slow sedentary second stage by weeks. It is my firm belief that, if every practitioner of medicine could go to the bedside of the acute pulmonary case with the consciousness that that "flu" or bronchopneumonia may have as its etiological factor the tubercle bacillus, suspicious histories would result in the observation of many cases over weeks and months, together with x-ray photographs, the result of which would be true early diagnosis of clinical tuberculosis to the degree that it would prove the most gratifying advance made against this infection since the discovery of the tubercle bacillus.

Developments of the past few years have brought more accurate estimates of the progress of a given case and have revised our former misconceptions. A few years ago we regarded the x-ray as of value in diagnosis only. During the last decade we have come to know that it is our most accurate means of estimating progress of the pulmonary lesion. As early as 1921, Amberson[1] pointed out the value of serial stereoroentgenograms to determine progression or retrogression of the pulmonary lesion.

McPhedran[2] states: "The x-ray is the method of precision for detecting the presence and evaluating the exact severity and direction of changes of a lesion." Fales[3] points out the great value of x-ray in the management of bed rest; that when formerly we modified bed rest when the temperature became normal and there was a gain in weight, "Clinicians, after adopting serial roentgenograms found how slow the clearing of the lung changes was in comparison with the improvement of the general conditions of the patient."

During the war, the United States Army established the arbitrary rule that persistent moist rales accentuated by cough indicated active pulmonary tuberculosis, and their disappearance meant arrest of the disease. It has been hard to dethrone the rale from his pinnacle of importance, but that has come to pass. Bruns[4] shows that rales are not due to moisture in the terminal bronchioles, as previously taught, but are due to expansion of partially collapsed alveoli or lobules from pressure of a neighboring lobule consolidated by tuberculous infiltration, fibrosis, or adhesions. Heise[5] has shown the very slight value of an increase or diminution of rales in determining the progress of a patient. On one point all seem to agree: the presence of rales in a case of long standing and unsupported by other findings is insufficient evidence to declare a case still active tuberculosis. I think most of us feel that the earlier the exudative lesion, the more significant are moist rales accentuated by cough, and the older or more chronic the lesion, the less significant are moist rales.

Standing next in importance to the x-ray in estimating the progress of clinical tuberculosis, are blood findings. The blood sedimentation tests, as refined by Greisheimer and Cutler, proved a very accurate estimate of the amount of cellular destruction going on in the organism, and for that reason they are especially applicable in tuberculosis.

The studies of the monocyte by Medlar and our own John Flinn, the monocytic-lymphocytic ratio and the relationship of these cells to the neutrophile, have brought information similar to the blood sedimentation but more accurate and more detailed. The information from blood studies not only reveals the present state of the disease with marked accuracy, but significant blood changes prognosticate impending retrogressive changes prior to the appearance of physical signs. The value of such advanced information cannot be over estimated.

If we have a detailed understanding of just what effect treatment has upon pathology in pulmonary tuberculosis, and to what end we are working with a certain line of treatment, we can eliminate hoodoo medicine and exaggerated claims on the optimistic side and can anticipate retrogression in time to alter treatment effectively on the pessimistic side.

When the case is undergoing the earlier pathological changes of infiltration and exudation, hygiene has held against all attacks. By hygiene we understand rest in bed, fresh air, good food, and all the details of good sanitation. When the patient is weak, thin, febrile and sweating at night, we have him in bed in a room with windows open. When fever and sweating subside, he is moved to the sleeping porch, where he gets more air and some air motion. When the patient is afebrile and weight has been gained, this hygiene may be intensified by providing more air motion and indirect sunlight. As the fibrosing stage is reached, hygiene can be intensified by stripping down the patient for the air bath and then to the sun bath. Finally he may be exercised nude on a promenade exposed to air, air motion, temperature change, and direct sunlight. When heliotherapy is evaluated as a degree of hygiene only, the air, air motion, temperature change, are considered to play as important a part as radiation and to be applied gradually and never abruptly, the hoodooism of lamps and misguided ideas of miraculous sun cures will be destroyed and a valuable therapeutic agent preserved.

When I stated above that hygiene was the treatment for the infiltrative and exudative stages of the disease, my little plan for intensified hygiene assumed a favorable progress toward fibrosis and healing. Only too frequently our cases do not present, until the exudative process has gone on to secondary infection, ulceration and cavitation. Then, in addition to our hygienic problem, we have a mechanical one. There is just one way to meet a mechanical problem and that is by mechanics.

Here we come to the theater in the treatment of pulmonary tuberculosis. For the development of the last decade in collapse therapy, with its many ingenious surgical procedures, has been most spectacular and dramatic. Heading the list is artificial pneumothorax, recent outstanding refinements of which are low-pressure pneumothorax, bilateral pneumothorax, complete drainage of effusions as pointed out by Nalbout[6], oleothorax for infections, and mediastinal anchorage. There are also the very important supplemental procedures that have made pneumothorax successful in an additional twenty per cent of cases, namely the pneumolysis of Jacobeus and phrenicectomy. Brune and Casper[7] summarize as follows: "In late years our greatest progress in phthisiotherapy has been in the treatment of advanced cases of pulmonary tuberculosis which were formerly considered hopeless and were abandoned to the natural evolution of the disease. Our great problem in the treatment of chronic pulmonary tuberculosis is the closure of pulmonary cavities."

Eighty per cent of cases with cavitation die if the cavity is untreated.

Extrapleural thoracoplasty has been practised successfully and extensively during the past ten years, to collapse cavities where simple collapse methods have failed. This operation has been refined and supplemented by pneumolysis according to the Casper technic, and unroofing of cavities, to where few cavities resist surgical attack today.

Coryllos[8] has made a most valuable contribution to collapse therapy by showing the importance of atelectasis. A cavity is held inflated because of air intake through a sinus and communicating bronchus, which not only exaggerates the mechanical problem, but the presence of oxygen in the inflated cavity is necessary food to acid-fast bacilli. Collapse, therefore, produces atelectasis by torsion on the connecting bronchus to the cavity, more

important than pressure on the cavity itself, because atelectasis results, producing more complete collapse and tubercle bacilli are rendered dormant by absence of oxygen.

Mechanical attacks are now so successful that it seems justifiable to lay down an arbitrary rule that open tuberculosis must be closed.

Actually we are in the midst of a mopping-up campaign at this time, closing the cavities and open tuberculosis accumulated during the last generation. Effective treatment will save the lives of many and death will claim those where treatment fails, so that in a brief span of years the old cavity cases will have disappeared. What are the prospects for effectively controlling the disease in the future and reducing the incidence of cavitation or advanced tuberculosis? Is it fantastic to assume that within a few years we may have this great infection under the control of our present instruments of attack?

Proper recognition of the acute onset of early tuberculosis, with serial x-rays following suspicious bronchopneumonias, should yield a high percentage of diagnosis of true early tuberculosis. Place those cases in bed, studying the progress of the disease with more frequent x-rays and routine blood studies, and impending retrogression can be foreseen in time to meet the issue. As the case will permit, attempt to intensify the hygiene gradually by fresh air, open air, air baths, and radiation, and the result will be obvious.

We are hopeful that the management of the allergic phase of the disease, possibly with desensitization methods, will place under control that second cycle of the disease, which will save many cases from advanced or cavitation stage of tuberculosis.

Supplement this hygienic management with the less radical collapse methods, like pneumothorax and phrenicectomy, and it seems valid to claim that we would have this infection under the same control as other diseases that have been mastered, like smallpox, typhoid fever and diphtheria. And if such an hypothesis is ever proved, it would place radical surgical procedures as the treatment of pulmonary tuberculosis in past history, with a glorious monument to its memory as having served effectively the cause of heroic therapy in a fight against the cavity, but leaving the field of the future to hygiene and conservatism.

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DOES TONSILLECTOMY LIGHT UP LATENT TUBERCULOSIS?

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(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

Some years ago I heard a physician, speaking informally before a medical meeting, discuss the physiology of the tonsil. At that time the campaign of minor surgery against foci of infection, teeth and tonsils in particular, was still going strong. This doctor counseled moderation. He claimed that the tonsil, situated at the junction of the upper respiratory and digestive tracts, served as a first line of defense in many infections, including tuberculosis. "We know, of course," he remarked, "that in young adults tonsillectomy is liable to be followed by the onset of pulmonary tuberculosis."

I did not know it, nor could I find statistics upon which the assertion might be based. The remark was vividly recalled, a year or so later, by an unfortunate result in one of my own cases. The patient, a college student, after the apparent arrest of a moderately advanced tu-

berculosis, had completed her college course and was working. Her health, however, was not so good as formerly; she was thin and easily fatigued. Her tonsils were large and obviously infected. On my advice they were removed. Although the operation was skilfully done, the throat was slow to heal, and before healing was completed there occurred a destructive reactivation of her lung disease.

This led me to undertake a more careful examination of my tuberculosis patients as to whether their tonsils had been removed; and if so, when, for the relief of what symptoms, and with what result. In 1927 I reviewed the records of 365 patients so studied. Of these, sixty-three, or about 17 per cent, had undergone tonsillectomy; seventeen during childhood, eighteen during adolescence, twenty-four in the third decade of life when the incidence of tuberculosis is highest, and four after the age of 30.

It was not always possible to learn the reasons for tonsillectomy during childhood, but those patients who were operated in later life knew the complaints with which they had gone to their doctors, and whether or not they had been relieved. Their symptoms may be classed as local and constitutional, definite or equivocal. The definite local symptoms were those of acute tonsillar infection; the definite constitutional symptoms, those of its well-known complications. The equivocal local symptoms included repeated colds, dryness of the throat, transient hoarseness, more or less cough, sometimes expectoration. The equivocal constitutional symptoms were asthenia, expressed as "tired all the time" or "loss of pep;" disturbances of digestion, and frequently aching in the neck, shoulders and legs.

When the cases were considered as a group it was apparent that the results of tonsillectomy bore a definite relation to the age at operation, and also to the symptoms for which relief had been sought. The patients operated during childhood all had good results, and their averaged interval between operation and the onset of tuberculosis was nearly 11 years.

Of the adolesents, nine gave a history of frank tonsilitis; these were all relieved by operation, they felt well after it, and there is nothing to suggest that tonsil surgery was related to the tuberculosis which appeared, on the average, nearly six years later. But the remaining nine patients of this age group, whose complaints had been equivocal and suggestive of focal infection, soon developed tuberculosis.

Of the twenty-four young adults (age 20-29) there were eight who had frank tonsillar infection. Seven were relieved, one still had tonsils and tonsillitis; again, in these eight cases, it seems clear that operation was not related to the onset of clinical tuberculosis some 5 years later. But the remaining sixteen of this age group, whose complaints had been not definite but equivocal, within the significantly brief time (averaged) of 5 months fell ill with tuberculosis.

None of the four middle-aged had been subject to acute tonsillitis, all had complained of failing health, and all broke down with tuberculosis not long thereafter.

A few case records are cited by way of illustration.

CASE 1. J. B., a student nurse, aged 18. She came from a mountain district where she had never seen tuberculosis, and entered training in a small hospital. She had always been very strong, but after 10 months of training she began to feel tired and aching, and had occasional "choking spells," as she called them. Her supervising nurse had her examined by a doctor, who removed her tonsils under ether. The wounds did not heal, and a month later she had a throat infection with fever, diagnosed as mumps. She continued to cough and in six more weeks developed abdominal cramps, with fever. Her appendix was then removed. The fever continued and a diagnosis of influenza was made; the influenza symptoms persisting, her sputum was examined and found to contain tubercle bacilli. When she was admitted to the sanitarium she had far-advanced tuberculosis involving both lungs, the larynx, the cecum, and the ascending colon.

Comment: This is of course an extreme case However, it is possible that student nurses in other institutions suffer from too much surgical attention.

CASE 2. S. H., a clerk, aged 27, had a series of colds in the spring; he felt sluggish and tired all summer, had a cough for which he blamed cigarettes. In September he had pleurisy. During this period of ill health his chest was repeatedly examined, with negative findings; but it was not x-rayed, nor was his sputum examined. Tonsillectomy was done in October. He felt no better after it, and stopped work. A roentgenogram made 6 months after operation showed considerable involvement of both lungs.

Comment: This history, verified in all its details, is fairly typical of the bad-result group operated in young adult life.

CASE 3. H. B., a brakeman, aged 37. For more

than a year he felt stiff, aching, and very tired when he came in from his trips. An ischiorectal abscess occurred, and it was drained under ether anesthesia. He resumed work, feeling the same as before. Six months later he went back to the company surgeon with the same indefinite complaint of "general debility." His tonsils were then removed. He did not complain of cough or expectoration, and no examination of chest or sputum was made. His health and strength continued to fail, and he was sent to the hospital. The chest x-ray showed old thick-walled cavities in both upper lobes, with the coalescing densities of recent and active disease spreading downward into both lung fields.

Comment: The inarticulateness of certain people, their inability to state their complaints understandably, may mislead an examiner unless he takes time for a thorough examination.

Summarizing this first series, reviewed in 1927, there seemed to be no bad results from tonsillectomies done in childhood, presumably for tonsillar infection. One-half of the operations performed in adolescence and one-third of those in young adult life had resulted favorably. But in twenty-nine cases, mostly those in which tonsillectomy had been done on equivocal indications, for the relief of focal infection or failing general health, the operation had been followed shortly by the onset of tuberculosis. Whether the toxic symptoms had been caused by unrecognized tuberculosis, or whether in some cases the operation actually provoked the onset, could not be determined.

Recently I have reviewed the records of 320 tuberculosis patients examined during the last three years, and studied in the light of what was learned from the earlier series. By comparison, the percentage of those deprived of their tonsils has increased, being 23 per cent in the later series. A tendency to operate at an earlier age is evident; the selection of patients for operation has been more judicious, and the results are better. The proportion of operations done by nose and throat specialists has increased.

The detailed results, and the interval between tonsillectomy and tuberculosis onset are shown for the second series in Table 1. It may be summarized by saying that all of those operated in childhood had good results; their interval to onset was 11½ years. Two-thirds of those operated in adolescence had good results and 9 years' interval before tuberculosis appeared; but the others, with temporary or partial relief, or none at all, soon developed tuberculosis. The third decade of life again had the greatest number of tonsillectomies,* in one-half of which the results were good and the interval to onset long; but the rest soon broke down with tuberculosis. Only two of the seven middle-aged persons subjected to tonsillectomy were relieved and remained well for a considerable time; the others, after relatively brief intervals, became ill with tuberculosis.

TONSILLECTOMY AND TUBERCULOSIS—TABLE 1.

Series of 1933—320 Tuberculosis Patients—74, or 23%, Had Tonsillectomy Before Onset

Age at Operation No. of Patients	Relief	Years to Onset	Partial or Temporary Relief	Years to Onset	No Relief	Years to Onset
Childhood 22 Patients	22=100%	11½	0		0	
Adolescence 21 Patients	13=62% (1 bad local—4%)	9	3=19%	2½	4=19%	Less than 1 yr.
Age 20-29 24 Patients	12=50% (1 bad local—4%)	8	4=17%	2	7=29%	Less than 1 yr.
Age 30-50 7 Patients	2=29%	5½	2=29%	2½	3=42%	Less than 1 yr.
74 Total	51		9		14	

DISCUSSION

Caution is needed in interpreting figures of this sort. The evidence is in part indirect, the number of cases small. The question presented can be answered finally only by the coordinated effort of workers in the two special fields, the throat and the chest. Still, the study of the material presented justifies certain conclusions.

It is clear that tonsillectomy in chlidhood does not protect against tuberculosis; neither does it predispose to tuberculosis, as the long interval from operation to onset shows.

In these two series of cases there is no evidence that tonsillectomy for the relief of acute tonsillar infection precipitated the onset of tuberculosis, whatever the patient's age.

The percentage of results satisfactory to the

patients varied inversely with the age at operation; the older, the worse.

In these two series of consecutive cases separated by an interval of six years, a considerable number of consumptives—7 per cent of the total in the second series, 8 per cent in the first—had undergone tonsillectomy, with little or no relief of symptoms, shortly before the onset of clinical tuberculosis.

Most of those who had little or no relief after tonsillectomy, with tuberculosis following soon thereafter, had complained of equivocal symptoms of the sort often attributed to focal infection—symptoms: hardly distinguishable from the toxic manifestations of early tuberculosis. In these cases, as in the successful ones, we must assume that the surgeons who operated found the tonsils so diseased as to afford a reasonable explanation of the symptoms, and that nothing in the patients' condition offered a contra-indication to operation. But if we make this assumption we can hardly escape the suspicion that in some instances at least the tonsillectomy precipitated the onset of clinical tuberculosis. This onset occurred too early and too often to be a coincidence.

Therefore, in the present state of our knowledge, it would seem to be the duty of the surgeon, before removing the tonsils of an adult or an adolescent for the relief of focal infection, to inform himself well concerning the condition of that patient's lungs. A casual examination of the chest is not sufficient; if there is the least doubt after a careful physical examination, the chest should be x-rayed, and the film should be interpreted by one skilled and experienced in that work. If there is a productive cough, the sputum should always be examined for tubercle bacilli. This opportunity for early diagnosis, creditable to the physician and most advantageous to the patient, should not be neglected.

In conclusion, let me emphasize that this paper is not an indictment of the operation of tonsillectomy nor of those who perform it. Rather, it is a plea for a greater degree of awareness of the onset symptoms of pulmonary tuberculosis, a common disease; and for the withholding of non-urgent tonsil surgery when tuberculosis is present or suspected.

* This high proportion, 32.4 per cent of the total, who had tonsillectomy during the third decade of life is unusual, and probably significant. Thus, Dr. W. A. Schwartz of Phoenix states in a personal communication that of 379 tonsillectomies performed since January, 1931, some 56 per cent were done during childhood, 5.5 per cent during adolescence, and 13.7 per cent on patients in the 20-29 year age group.

DISCUSSION

DR. FRANK SCHUSTER (El Paso): I have enjoyed Dr. Phillips' paper and I believe it raises an important question in which we, particularly in the Southwest, should be interested.

We must be careful, as Dr. Phillips states, in drawing hasty conclusions from these statistics. There are two sides to this picture and I believe we would have a more complete picture if we compared his figures with a similar group of cases in which tonsillectomy was advised, but not performed. Is it not possible, even probable, in such a group, that a certain percentage of active tuberculosis would develop, and this might even be precipitated by an attack of acute tonsillitis or any other intercurrent debilitating condition, as well as by a tonsillectomy.

It has been our practice to advise tonsillectomy for two principal reasons: (1) purely local, (2) focal or constitutional. That is, if we have a patient whose only symptoms are three or four attacks of tonsillitis a year, which cause the patient to lose several weeks a year from school or his usual occupation, then operation is advised purely for the local condition. From Dr. Phillips' paper, I conclude this type of case has almost uniform benefit.

In the second type, complaining of the so-called equivocal symptoms, we are most careful in our history and physical examination. It is a pretty poor tonsil in which we cannot find some evidence of chronic infection. We try, therefore, to investigate not only the tonsils, but the other foci of infection, such as teeth, sinuses, and prostate. A general examination, including x-rays of chest, is made, and tonsillectomy is advised only after we are reasonably sure, not only that the tonsils are infected, but that they are the probable focus of infection and causing the symptoms. If our conclusions are not definite, a period of observation and recheck is advised. In this we try to eliminate the potential breakdown case.

It is not easy to eliminate these potential tuberculous patients. In the first place, a patient with latent tuberculosis who develops symptoms is never willing to believe his tuberculosis is causing the symptoms. The tonsils are a convenient place to lay the blame and he is willing and anxious to find it there. Then, again, as the doctor has emphasized, we do not ordinarily take a complete history or physical examination on our tonsil cases. The differential diagnosis between chronic tonsillitis and incipient tuberculosis, may be extremely difficult. The history and physical findings may be identical. We may get the same history of loss of weight, loss of appetite, rapid pulse, low-grade temperature, night sweats, and so forth, even cough and blood-spitting, common to the two conditions. A negative

sputum does not rule out incipient tuberculosis. In such cases, until a positive diagnosis is possible, the potential dangers far outweigh the benefits expected and the operation should be postponed for a period of observation.

I think it is generally conceded that we practically all acquire tuberculosis in early childhood, which heals and may never become active. Secondary or intercurrent disease causes the breakdown and activity to take place. Therefore, elimination of these infections should help prevent activity developing.

Crowe at Johns Hopkins has frequently found tuberculosis in the tonsils removed in children for general indications. It is probable that the tonsil is a point where the tubercle bacillus gains entrance to the system and from there by lymphatics to the peribronchial glands. From this we might even argue that tonsillectomy may prevent tuberculosis reaching the peribronchial glands in children. We find in the literature many cases in which, in incipient and active tuberculosis tonsillectomy is advised and has a beneficial influence on the tuberculous process.

Terry and associates, at the Veterans' Hospital at Oteen, state that they do not hesitate to perform tonsillectomy where indicated, in active tuberculous patients. They found 12.5 per cent of their patients showed tuberculosis in the tonsil on laboratory examination.

Personally, we do not hesitate to do tonsillectomy on tuberculous patients where the indication is definite and clear. We do prefer to wait for an arrest or quiescence of the tuberculous process and then work in close cooperation with the chest men and use only local anesthesia.

I can, therefore, heartliy agree with Dr. Phillips that we, especially in this Southwest section, should work more closely with the chest man, take more careful histories, in cases of doubt postpone the operation for a period of observation, and continue to gather these statistics until we can arrive at the true relationship of the tonsil to tuberculosis.

Tonsillectomy is still looked upon as minor surgery. Many physicians consider this operation an office procedure. It may be in many cases, but when we realize the potential tragic results and have figures such as the doctor has presented today, we should not recommend this procedure without careful weighing of the benefits expected against the potential dangers of the operation.

THE TREATMENT OF TUBERCULOUS PULMONARY CAVITY.

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(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933.)

The treatment of pulmonary cavity has, during the past decade, received ever-increasing attention. So important a place in phthisiotherapy has it come to occupy that one author, Fischel[1], in a recent paper has made the statement that "the treatment of pulmonary tuberculosis is to a great extent the treatment of cavities."

The serious prognostic import of cavities has long been recognized, but there is still a great difference of opinion as to the degree of this seriousness. On the one hand, we have opinions such as Graeff[2] expressed as far back as 1921, that the presence of a tuberculous cavity spells death to the bearer. Geigler[3], in a series of seventy-two cavity cases, found none which completely healed. Barnes and Barnes[4], in a large series of cases at the Rhode Island State Sanatorium, found that 80 per cent of cavity cases died within the first year and 90 per cent within five years. Pinner[5] also, has emhasized the relatively brief average survival of cavity bearers.

As opposed to these authorities, others have given a more optimistic outlook. To mention a few, Turban and Staube[6], Ritschel[7], Courcoux and Gelson[8], Baum, Mebel and Kane[9], and Jaquerod[10] have all stressed the not infrequent spontaneous closure of cavities. A recent study by Fales and Beaudet[11], from the Veterans' Bureau Hospital at Livermore, California, bears the conclusion that "a surprisingly large percentage of cavities healed on prolonged and thorough rest treatment, rather than a small minority as stated by some writers." They state that rest treatment appears to them of greater importance in the healing of cavity than surgical measures and they would resort to the latter only after a long trial of rest.

In spite of this seeming confusion of views and divergence of opinions as to the prognosis of cavities, I believe this fact does stand out. Tuberculous cavities, even though we agree that they may, and possibly not rarely do, heal spontaneously, add immensely to the gravity of prognosis. Most important is it, therefore, to get them closed whenever possible, by one therapeutic method or another.

Many classifications of pulmonary cavities have been attempted and a consideration of them may be of help in treatment. They may be classified by size, into small, medium, and large; by shape, into round and irregular; by age, into recent or old, acute or chronic; by number, into single or multiple; by the condition of their walls, into thin or thick walled, smooth or ragged walled. Attempt has also been made to differentiate them, following Ranke's theory, into primary, secondary, and tertiary, according to the stage of the disease in which they arise. Especially helpful are two recent attempts at classification made by Jaquerod[11] and by Pinner.[12]

Jaquerod divides cavities into three groups. It is a classification based fundamentally on the age of the cavity. The first group he calls the precavity. It is characterized by the roentgenologic appearance of a hazy ring shadow with more or less opaque interior and often is not accompanied by purulent expectoration or tubercle bacilli in the sputum. He believes that it signifies the earliest stage in which softening of the area involved and an attempt at walling off has occurred, before any expulsion of the contents has taken place. Jaquerod's second group comprises the round, fairly thin-walled cavity with roentgenologically transparent interior and often with a haziness surrounding the ring, indicating inflammatory exudation. His third group includes all older cavities, either round or of irregular shape and in which a more or less heavy fibrous wall has been formed.

Pinner's classification is also based partly on age but takes into consideration the nature of the tuberculous process in which the cavity arises and the anatomico-histologic structure of the cavity wall. It also comprises three types. The first is described as moth-eaten areas in infiltrated parenchyma due to small multiple cavities which are surrounded by exudative tuberculous processes. It represents a loss of tissue in an area of tuberculous pneumonia. Pinner's second type is the round or oval cavity, roentgenologically appearing as an annular shadow of smooth outline and without any marked distortion of shape. It represents a loss of tissue due to an exudative lesion, with a new-formed cavity wall consisting of a thin layer of concentrically arranged young connective-tissue fibers. His third type, the fibrotic irregular cavity, represents older forms in which heavy fibrosis, often with resulting distortion, has taken place in the cavity wall, surrounding tissues, or overlying pleura.

It will be seen that Jaquerod's and Pinner's second and third types of cavities are practically identical. Jaquerod's first type is only an earlier stage of his second type, while Pinner's first type deals with an essentially different condition—the very acute non-walled excavations arising in a pneumonic process.

I have reviewed these classifications of cavities somewhat at length because they are of considerable help in treatment and I shall refer to them subsequently.

We certainly can not lay down any hard and fast rules as to how cavities should be treated. Our only hard and fast rule must be, in this as in any other field of medicnie, to keep constantly in mind that we are treating the individual patient rather than his disease. Perhaps more harm is done and more therapeutic failures are caused by the neglect of physicians to grasp or to practise this precept than by any other fault on their part. We must individualize each patient, endeavoring to do for Mr. A., who has a pulmonary cavity, the things which, taking into consideration his whole condition, circumstances, and environment, will give him the best chance. What I shall say, therefore, on this subject I do not regard at all as rules for the treatment of pulmonary cavities, but as broad generalizations from my own or others' experience which may apply to the individual case, or which may in that particular case have to be departed from.

Given the problem of a patient with tuberculous pulmonary cavity, we shall in general have to choose in his treatment between three main courses. First, we may decide to treat

expectantly by rest. Or, second, we may decide to supplement rest by one or more of the collapse methods—artificial pneumothorax, phrenic nerve paralysis, or thoracoplasty. Or, third, we may decide that the best course is to allow the patient to undertake a more-or-less active life without special measures. In deciding our problem, the following general principles may be of help as therapeutic guides.

First, let us consider those which deal with the character of the cavity itself.

Generally speaking, the more acute the pathologic process in which cavitation is taking place, the greater the indication for immediate therapy. In fact, with acute exudative processes, tuberculous pneumonia, unless there are absolute contraindications, artificial pneumothorax should be resorted to, if possible, either immediately on the appearance of such a process or preferably on the first appearance of cavitation. Pinner's first type of cavity, honey-combing in a pneumonic area, should be collapsed without delay and before the almost inevitable extensive cavitation or extension of involved areas has resulted. A successful collapse offers the best chance of checking the process.

With more chronic processes, time is of less importance. The smaller the cavity, the more regular its shape, the more recent its development, the thinner—the less heavily fibrosed—its wall, the closer its location to the apex, the less the adjacent pulmonary involvement, and the less advanced and active the disease in other parts of the lungs, the better the chance of healing on simple rest therapy. Therefore, in the case of recent, small, round, thin-walled cavity in the upper third of the lung, with little involvement in the rest of the lung, it may be safe to postpone collapse therapy, put the patient on bed rest and watch developments in serial roentgenograms. This is Jaquerod's and Pinner's second type of cavity and is the type which undoubtedly frequently heals spontaneously and has occasioned the favorable reports mentioned at the beginning of this paper. On the other hand, it must be remembered that this is also the type of cavity which yields most readily to collapse therapy, and that delay may mean the production of a heavily fibrosed wall, or of pleural adhesion preventing successful collapse. It often becomes a nice question of judgment whether to wait or immediately to attempt a collapse. Certainly, unless a short period of observation shows a decided tendency to heal by contraction, it would seem unwise to delay longer—unless definite contra-indications exist—an attempt at artificial pneumothorax.

The longer a cavity remains unhealed, the greater the danger to the patient from the accidents attendant on active cavitation, such as hemorrhage or bronchogenic spread from aspiration of secretion into uninvolved areas. If by one method a certain cavity might heal in one year and by another method in two years, it is plain that the risk of such an accident, often most serious in its consequences, is just twice as great if resort is had to the longer method. This is evidently a truism, but one to which I believe we pay too little attention in our selection of methods. And this, of course, entirely aside from the standpoint of the patient's comfort, happiness, and expense involved in a shorter period of disability. This is a strong argument for resort when possible to collapse therapy.

It has also seemed to me that cavities which have healed spontaneously have a greater tendency to reopen again than those which have healed under collapse therapy. If this is a fact, it is also an argument for collapse therapy.

Old, heavily walled cavities, especially those in which there is much fibrosis in surrounding tissues, the third-type cavities of Jaquerod or Pinner, are generally difficult to heal by any method. Occasionally they do heal by long-continued rest. Not infrequently an artificial pneumothorax and occasionally a phrenic paralysis, while not collapsing them quickly as in the case of more recent excavations, will relieve the tension on their walls sufficiently to enable a gradual healing. Thoracoplasty has perhaps its greatest field in collapsing these resistant cavities and sometimes achieves spectacular results.

Second, we may consider principles which deal with the general condition, antecedent history, and economic circumstances of the patient.

The patient's age is of importance. In general with adults, the older the patient, the more conservative should we be in regard to

operative measures. According to Matson[13], it is seldom advisable to attempt a severe operation like thoracoplasty with patients over forty years old. I would not attempt to set any limit for milder forms of surgery like artificial pneumothorax or phrenicectomy, though even here, with elderly patients we should certainly be much more cautious than with those in youth or middle age. I believe also that this applies in lesser degree to prolonged bed-rest treatment. The youthful patient can be given such for months or years with impunity. With the elderly, the loss of tone in heart and other muscles may be such as to overbalance any benefit to the lungs, and make the treatment worse than the disease.

Severe complications, tuberculous or non-tuberculous, should also be very carefully considered when thinking of surgery. In the presence of these we may often feel that the chance of harming our patient out-weighs the chance of doing him good. This may also apply to patients desperately sick from their pulmonary disease, especially if we are convinced that much of their toxemia is from the contralateral lung.

Bilateral involvement has in the past been considered a contra-indication to collapse therapy. Today many such cases are being treated successfully by the use of bilateral pneumothorax, or by pneumothorax on one side and phrenic nerve paralysis on the other.

The antecedent history, especially as to the patient's previous reaction to tuberculous infection, should be given due weight. If he has shown an ability to fibrose his lesions promptly, if he has previously healed cavities without surgery, and if his present condition is not an acutely progressing one, we shall certainly be less inclined to resort immediately to collapse.

The economic factor may well be the deciding one in the individual case when the question is at a balance. The patient who can afford to spend years, if necessary, in his attempt to regain health, is in a very different category as regards treatment from the one whose limited means make it essential that he get quickly back to work. With the latter, we may feel justified in taking chances on surgical treatment that we would not with the former. This applies especially to thoracoplasty. As aganist this, however, we must not forget the factor I have already mentioned of the multiplied risk with the slower method.

Third, we may consider the choice of surgical procedures.

Of the different collapse measures, artificial pneumothorax, when it can be induced, generally gives best results and should almost always be the first choice. Phrenic nerve paralysis has had a great vogue in recent years and undoubtedly is very often helpful. I believe, however, that the tendency has been to overestimate its value, and that harm may have been done by an over-enthusiastic and uncritical use of it So far as its use in the treatment of cavity is concerned, I believe that it should generally be tried only in those cases where an artificial pneumothorax is indicated but in which, after trial, it is found that a successful one can not be induced. The collapse and the pulmonary rest produced by it are so inferior to those of a successful pneumothorax that only with rare exceptions should it be given preference. Such an exception, for instance, might be when it is known that the patient is soon to go to a place where pneumothorax refills can not be obtained. It is often also a helpful adjunct to pneumothorax, especially when adhesions to the diaphragm prevent a good collapse, and is generally used as an adjunct to thoracoplasty.

Thoracoplasty also should generally not be used until after an unsuccessful pneumothorax, for the reasons that it does not give as good a collapse as a good pneumothorax, that it can not be undone if the patient should be reacting badly to it, and that it is a much more serious operation and one that is attended by much greater risk. Its principle field, in so far as our subject is concerned, is in the collapse of cavities with stiff walls or with overlying pleural adhesions sufficient to prevent a collapse by pneumothorax, in patients not past middle age in good general condition, and with the contralateral lung not involved or involved with only slight non-progressive lesions.

I have not time to take up in detail the various adjunct surgical measures which have been devised to assist one or the other of these main measures in collapsing the lung. Intrapleural or extrapleural pneumolysis may, in the hands of an expert chest surgeon, occasionally be of great help in freeing adhesions

which are preventing a successful pneumothorax; extrapleural filling operations should theoretically be very useful in adherent apical cavities, although practically they do not seem to have met with great success; intercostal neurectomy as advocated by Alexander[14], and scaleniotomy, by Gale[15], may possibly in selected cases be of slight help as an adjunct to phrenic nerve paralysis or to thoracoplasty.

With these general principles in mind, dealing as they do with types of cavity, condition and circumstances of the patient, and choice of operative procedures, we may try to select for the individual cavity patient the method best suited to his case.

In general, we shall treat by rest without surgical measures, even though there may be no contra-indication to such, for a period of observation, recent small favorably located cavities. We shall not, however, delay very long, even with such favorable cavities, to try artificial pneumothorax, if they are not found to be fairly rapidly healing by contraction. We shall be forced to treat by rest large numbers of cavity patients in whom contra-indications to surgical procedures exist. The most common contra-indication is active progressive disease with or without cavitation in the other lung. Bilateral pneumothorax is being tried more and more in such cases and sometimes meets with striking success. From several recent cases, I have been much impressed with its possibilities and with its value. Dyspnea, if at all severe, from any cause, is a contra-indication to surgical measures. Severe complications, tuberculous or otherwise, which make a hopeless prognosis, are also contra-indications which may make it seem useless or dangerous to use any other measure than rest.

By artificial pneumothorax we shall generally attempt to treat, either immediately or after a period of observation on rest, cavities of almost any type in which no contra-indications are present. Especially shall we use it without delay in acute progressing processes of the pneumonic or exudative type.

Phrenic nerve paralysis we shall use in cases where pneumothorax is indicated but can not on trial be induced, and we shall frequently use it to supplement an insufficient pneumothorax.

One of the various thoracoplastic procedures we shall reserve for either recent or old cavities in fairly young patients, preferably those not over forty years old, in good general condition, with no involvement or only slight inactive involvement of the other lung, in whom a satisfactory pneumothorax can not be induced and in whom phrenicectomy alone, as is generally the case, will seem insufficient.

And finally there will be a considerable number of cavity bearers whom we can not, for one reason or another, treat surgically and who, we may feel, are no longer benefited by a continued rest cure. We shall arrive at such a conclusion perhaps because we have ourselves watched the patient through a prolonged rest cure during which constitutional symptoms have ceased and the pathologic process in the lungs has come to a standstill, but the cavity still exists. There comes a time with such a patient when we shall feel it advisable to attempt by graduated exercise to determine his tolerance and to get him back, within his limitations, to a more natural mode of living. Or a cavity patient may present himself to us for the first time, with a story of having for a long period lived a life of ordinary activity without undue inconvenience or ill health, and we may feel that nothing is to be gained and perhaps much lost by making an invalid of such a one. Especially in elderly tuberculous patients of such description, do I think we may make a grave mistake by subjecting them to prolonged bed rest. They must be instructed as to their limitations, and how not to be a source of danger to others, but beyond this, attempts at intensive treatment may be pernicious and render their last state worse than their first.

In conclusion, I would again emphasize that we can lay down no hard and fast rules in the treatment of cavities; that we must study the problem of each patient from the standpoint not only of his disease but of every condition, hereditary or environmental, which makes him the particular individual he is. Guided by general principles of treatment a few of which, in this particular field of pulmonary cavities, as I have found them useful to myself, I have attempted to outline, we must help him find the best solution of his problem.

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HOW OUR EXPERIENCE IN THE LAST FEW YEARS HAS CHANGED OUR ATTITUDE TOWARD COLLAPSE THERAPY.

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(Read before the Nineteenth Annual Session of the Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

Last year, when I had the pleasure of addressing this society, I stated that I had nothing new to bring you in phthisiotherapy, unless it were a new enthusiasm. Again this year, I can only add to that enthusiasm for what can be accomplished in many advanced cases of pulmonary tuberculosis with the aid of collapse therapy.

As Clinical Director of one of the Government's large tuberculosis hospitals, I have had an opportunity of evaluating the results of the different forms of collapse therapy—not only the work in our own hospital and that of the other Government service hospitals, but the results of this work in various private institutions and clinics as well, for many veterans seek the advice and skill of the private clinicians and surgeons.

I do not, in any way, advocate the replacement of our usual rest and hygiene treatment by that of collapse therapy, nor should our enthusiasm for this form of treatment allow us to forget or neglect these principles, which alone have proved the one specific treatment for tuberculosis. Better that we should think of our modern collapse principles as aids to our rest treatment. Collapse therapy is rest treatment. All forms of collapse are splinting or rest of the diseased lung.

Most of the cases coming to us have far advanced disease; most of them have bilateral disease; most of them have large cavities in one or both lungs. I dare say that the majority of adult pulmonary tuberculosis cases coming to you who practice here in the Southwest, are in the advanced state. Practically all of the veterans coming to us, in Tucson, give a history of chronic tuberculosis of many years' standing—from two to fifteen years. Most of them have had long periods, sometimes years, of hospital or sanatorium treatment, under careful supervision, but in spite of prolonged rest treatment, these men come to us in an advanced progressive state of the disease, sick and discouraged. Most of them represent the failures of rest treatment alone.

What shall we do with these advanced cases? Shall we continue glibly to tell these discouraged sufferers to rest in bed from 18 to 24 hours a day, and consider our duty done when we sit passively in our chair and see that prescribed rest is enforced, remembering that most of these men have had years of such advice? A few years ago, in most tuberculosis hospitals, this was more or less the practice except for a few well-selected, strictly unilateral pneumothorax cases. The atmosphere of discouragement was not alone among the patients, but was reflected in the medical staff. That feeling of utter hopelessness: "Oh, what's the use. He is an advanced, bilateral case. Too bad that nothing can be done for him; too bad that he has so much disease in that opposite lung, which prohibits artificial pneumothorax; too bad the x-ray shows adhesions and thickened pleura. The best we can do is to make him comfortable."

Such an attitude did not lend itself to enthusiasm for the staff, nor to renewed hope for the patient. If I were asked to name the two most important assets in any tuberculosis institute, I would name an enthusiastic staff

and a group of patients in whom an enthusiastic staff had been able to instill a new hope and confidence.

That indifferent hopeless attitude toward the advanced case, of a few years ago, no longer exists in our hospital, but has been replaced by one of enthusiasm among patients and staff. What has accomplished this great change? I can answer in two words—Collapse Therapy.

I know that our entire staff is really enjoying its work. It is getting to be a regular game in which every member is taking an enthusiastic part. We take the attitude that, if the patient has played the same game of "chasing the cure" for years, in the same routine way, and has lost, then, if we still hold an ace that he has not played, we may win.

Every patient, on admission, is sent through a receiving ward for careful observation and diagnosis, including a careful history, physical examination, necessary laboratory tests, roentgenograms, temperature and pulse observations, special examinations as indicated. The receiving-ward physician is not only a clever diagnostician but a man blessed with unlimited enthusiasm. He studies every case for some possible form of collapse therapy. He starts the contact with the patient in regard to doing something definite for him.

An experienced roentgenologist studies every case carefully for possible collapse therapy and makes suggestions. When finally the patient has finished the observational and diagnostic data, the receiving-ward physician brings him before the entire medical staff, in weekly conference, where x-rays, clinical records, and physical examinations are discussed in view of some form of collapse therapy. These meetings are comprised of the manager, clinical director, surgeon and tuberculosis specialists, cardiologist, roentgenologist and pneumothorax operator. Everyone takes a part in these discussions and feels that his opinion is considered.

The patient feels that we are interested in him and that perhaps he will receive a "new deal." His face brightens, a new hope and confidence is born and, even though we fail to close that cavity with collapse therapy, we have gained a cooperation with that patient which in the end will be of much benefit.

After these cases are discussed in conference, the clinical director contacts these patients, if necessary, for a more detailed personal discussion of their cases, answers questions and discusses the proposed program. From time to time after these cases are conferenced, the physician in charge of the case again presents the case to the entire staff to show the results of the collapse therapy, whether the attempts have been a success or failure, and to seek advice for an additional or different program. This program has become so interesting that the new enthusiasm has caught the entire staff. We can scarcely wait to see what success has attended our efforts.

A canvass of our hospital, one day last week, showed 300 tuberculous patients under treatment. Of this number, 149, or approximately 50 per cent, had had, or were receiving, some form of collapse therapy. Of this 50 per cent, eighty were pneumothorax cases, fifty-three had phrenic nerve interruptions, ten were thoracoplastic, and five had received rib resections for various reasons; or, approximately: pneumothorax, 26 per cent; phrenectomy, 16.5 per cent; thoracoplastic, 3⅓ per cent. Aside from this, there are various combinations of the different forms of collapse.

When we consider that most of these men are far-advanced bilateral cases with large cavitations, that collapse therapy had not been performed in spite of years of progressive lesions, you can see how our attitude toward collapse therapy has changed.

A review of our cases shows that our program of collapse therapy has been justified. Many of our failures are represented by cases that were practically terminal when pneumothorax or phrenic nerve interruption was instituted, but our enthusiasm has allowed us to try something, even in these tragic cases. We feel that these patients have often had life prolonged and have been made more comfortable. Certainly, in these cases, the time for "watchful waiting" has passed.

We used to be quite proud of a slight gain in weight or a slight reduction of the area of rales, or other general improvements, in these advanced cavity cases; but experience has taught us that, unless we can close the cavity, these improvements mean little and our pa-

tient is doomed to a life of invalidism with life expectancy of only a few years, with complications, progression, amyloidosis and danger of pulmonary accidents.

While I do not have the time, here, to discuss the various indications for the various forms for collapse therapy, I want to say a few words concerning our present opinions as compared to those of a few years ago.

PNEUMOTHORAX

Not many years ago, when we considered a case for artificial pneumothorax, we demanded a strictly unilateral case. We were meticulous in our physical examination and study of roentgen films, to elicit the presence of any active disease in contralateral lung. Both physician and patient talked about the "extra load" that would be thrown on the contralateral lung. Both physician and patient were well schooled in the contra-indications for artificial pneumothorax. It has been our experience that, if we can close that large cavity in the one lung, the opposite lung, although diseased itself, often improves remarkably and even becomes entirely healed. We once believed that these lesions healed only by fibrosis. We now believe they are often entirely absorbed, somewhat analogous to the resolution seen in pneumonia.

We now give pneumothorax in bilateral disease with large or multiple cavitation in one lung and with considerable disease in the opposite lung. We even give artificial pneumothorax in large-cavity lungs with smaller cavity in contralateral lung. We give artificial pneumothorax in advanced bilateral disease. in severe uncontrollable pulmonary hemorrhage. We have found that often a partial collapse, especially if a selective collapse, works wonders in reducing the symptoms of a toxic progressive case.

Our experience has proved to us that many cases of advanced bilateral disease, with bilateral cavities, do remarkably well under bilateral artificial pneumothorax. The success which can be obtained in some of these cases —the sudden reduction of fever, lessened cough and expectoration, gain in appetite and weight, and improvement in general condition. incident to the induction of pneumothorax in these advanced cases—is often quite dramatic. The improved mental attitude which accompanies this improvement is one of the most gratifying results of this therapy. When you can actually do something, and especially when that something is actually physical, you have a cheerful, hopeful, cooperative patient.

Of course there are many contra-indications for pneumothorax; however, I remember one time last winter, at a medical meeting, I was showing some rather striking results of artificial pneumothorax, including some bilateral pneumothorax cases in advanced bilateral disease. One doctor, in discussing the work, stated that after seeing these cases, he wondered if there were any contra-indications for pneumothorax.

PHRENICECTOMY

We started doing phrenicectomy in our hospital about six years ago. Like many others, we believed that it was indicated only in strictly unilateral disease and especially for basal lesions. Thus we found its indications quite limited. As time goes on and our experience broadens, we find that there is no end to the indications and the usefulness of this simple operation. Aside from artificial pneumothorax, we find its use the most helpful of any other measure in treating these advanced cases.

We have heard much about comparing the results of artificial pneumothorax with those of phrenic nerve interruption. We do not believe it is fair to compare these two forms of therapy. They are entirely different procedures. It is in the role of substitute for artificial pneumothorax that we have found phrenic nerve interruption of greatest value in treating the far-advanced case. Every case has its problems and must be worked out individually. We do both permanent and temporary interruption, depending on the indications.

The successes which have attended this operation, in many of our advanced cases, have been so striking that we are constantly finding increased indications for its use. We no longer use it only in basal lesions, but in apical cavitation as well, and the good results obtained are sufficient to warrant its use in disease in any part of the lung, especially any chronic fibrocavernous disease. We have found that it is useful in controlling hemorrhage where artificial pneumothorax has failed on

account of thick pleura, adhesions, and other reasons.

We used to try to measure the success of a proposed phrenicectomy by the amount of movement seen of diaphragm in fluoroscope. We anticipated good results if the diaphragm was freely movable and free of adhesions and a high rise of diaphragm could be expected. It is now our experience that it is often in the adhesion cases where the best results are obtained and we are becoming convinced that it is diaphragmatic adhesions which have prevented the necessary rest and healing of the diseased lung. It is in this class of cases that some of our most striking improvements have occurred. With the paralysis and rise of the diaphragm, the lung is allowed to relax, the cavities are often closed, the lung is placed at rest, cough is controlled, and immediate improvement occurs. We feel that this principle of lung relaxation, in these extensive adhesion cases, has been proved in some of our most recent experiences with phrenic nerve interruption as a supplement in unsuccessful pneumothorax cases.

In those cases of artificial pneumothorax where the cavity is prevented from closing on account of pleural adhesions, or where cavity is located near hilum and large stiff-walled bronchi, we have found frequently that by supplementing the pneumothorax with phrenic nerve interruption, the relaxation afforded allows closure of cavity and stops the troublesome symptoms. We believe the results of this operation should be thought of as relaxation therapy rather than collapse therapy.

THORACOPLASTY

In common with all the other clinics, we believe that the high mortality rate of thoracoplasty of a few years ago, can be accounted for by our enthusiasm to save desperate cases. The operation was too often one of last resort in highly toxic cases with no resistance, often with inadequate contralateral lung and weakened myocardium.

Unlike pneumothorax and phrenicectomy, the field of usefulness is limited and the indications become limited and definite. The percentage of our patients who can meet these rigid indications is small. We have found that the patient must be in good general condition, resistance good, and great care exercised to determine an adequate contralateral lung and an adequate myocardium. However, in those cases of unilateral fibrocaseous and fibrocavernous disease, in which paralysis of the diaphragm and artificial pneumothorax have failed, we feel that, if the patient meets the modern requirements of this operation, it should be performed by all means.

There is one type of case, however, in which thoracoplasty is demanded, in spite of severe illness with toxic symptoms, and that one definite indication is tuberculous empyema.

It is our opinion that, if thoracoplasty had no other use or indication, it would still be a God-send in this single condition. Tuberculous empyema has always constituted one of our most dreaded complications, treatment has been most discouraging and mortality high. Thoracoplasty now saves many of these otherwise hopeless cases.

SHOT BAGS

I find that the majority of patients coming to us have never tried or even heard of the use of shot bags. These bags are placed on the upper chest, over affected part of the lung, in gradually increasing weights. Different patients tolerate different weights. Some can wear them up to twelve or fifteen pounds. We have seen lesions improve and cavities close which otherwise have failed to close under the strictest bed rest. We sometimes wonder whether it is altogether the actual weight and immobilization afforded, which makes for the improvement, or whether it is the changed psychology of the patient which has much to do with his improvement. Here, again, we are doing something actually physical for our patient. He is taking absolute rest as we wish him to take it. He is doing something for himself. He has something definite to work for and to think about. We gain the fullest cooperation.

Yes, we are enthusiastic over the results that can be attained with the aid of the different forms of collapse therapy in the treatment of far-advanced pulmonary tuberculosis. Occasionally we meet a more conservative physician who still points out the failures of collapse therapy. We admit that there are many failures, but, in the type of cases which we are treating, we feel that, if we can have one suc-

cess and several failures, we have accomplished much and lost nothing.

We find that the doctor who is inclined to criticise our modern enthusiasm for collapse therapy, usually speaks in terms of cures. We have learned that, in the far-advanced progressive fibrocavernous case of long standing, the time for cure has usually passed. If we can give these patients even partial industrial, or even social, rehabilitation, we are gratified. We believe we can point to enough successes to warrant our enthusiasm.

PUBLIC HEALTH NOTES

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MATERNAL MORTALITY

There are certain public-health problems which lie less in the field of scientific investigation than in the field of education and administration. Notable among these is the problem of maternal mortality. While, in the present century, infant mortality has been reduced from 170 per 1,000 live births to 58, and the death rate from tuberculosis has been cut to one-third, the deaths of women in childbirth occur with substantially the same frequency year after year.

A table published by the Metropolitan Life Insurance Company[1] gives the rates in selected countries for the years 1910 to 1932. The rates for England, Wales, and Ireland have been adjusted so as to make them comparable with those for the United States. It is believed that the rates given for Canada, Australia, New Zealand, and the Netherlands are comparable without adjustment. For the rest, the statisticians conclude that "even allowing for all these variations in classification, registration, and so forth, it is fairly certain that the maternal mortality rate in the United States is higher today than in any other civilized country."

Having been somewhat intimately associated with a committee of obstetricians and statisticians who studied the maternal mortality in the city of Denver during the year 1930, I am able to appreciate the serious difficulties to be encountered in obtaining accurate knowledge of the true primary cause of death in these cases. Interviews were made by a public-health nurse in every case and in very many cases the doctor in charge was also interviewed for us by a leading obstetrical specialist. Even so, one was forced to conclude that sometimes the true cause of death had not been elicited. I am the better able to appreciate at something like its real value the extremely careful and authoritative investigation made by the New York Academy of Medicine of puerperal deaths in New York City from 1930 to 1932.[2] Twice before has the Academy of Medicine attempted such a study and on each occasion has rejected the data obtained as being insufficiently accurate. The present study deserves to be thoroughly and dispassionately digested by every physician who is engaged in obstetrics. The reader will find that every one of 2,041 deaths was investigated within a week of its occurrence and that a jury of obstetricians, sitting once each month to determine the cause of death, has classified 1,343 of these deaths as preventable. Let the reader judge for himself on the evidence whether or not this is fair. Will he agree that "the profession must accept the responsibility for educating the lay public to a better understanding of the aims of obstetrics and the methods by which those aims may be realized. . . . A prospective mother must have further instruction in the necessity for prenatal care. . . . Operative delivery undertaken merely to alleviate pain or shorten labor involves increased risk for both mother and baby. The relative safety of delivery at home should be emphasized. . . . The situation in regard to midwives must be altered. More schools are needed for their training, including both women who have had previous training as nurses and those who have not. . . . The physician must be prepared to give the midwife unqualified cooperation. . . ."? It is perhaps unfair to take these somewhat challenging recommendations away from their context and the evidence that supports them. But the book itself may be bought or borrowed and the subject is one which deserves to be thrashed out in a symposium at the next meeting of the Medical and Surgical Association of the Southwest.

DIPHTHERIA MORTALITY

The high death rate from diphtheria in New Mexico during the year 1932 has given us an unenviable national reputation. It is in part accounted for by the fact that we have been passing through a diphtheria wave, as the following figures testify:

Table 1. Diphtheria Cases and Deaths in New Mexico 1929-1933.

Year	Total Cases Including Indians	Total Deaths Excluding Indians
1929	364	35
1930	387	51
1931	400	45
1932	673	84
1933	385	?

Efforts have been made in inverse proportion to the relative inadequacy of personnel to immunize susceptible children. The health officer of Dona Ana County has noticed that as the school children become immune a larger proportion of his cases are in older-age groups. This observation is borne out by a statistical tabulation.

Table 2. Relative incidence of diphtheria in pre-school and school age groups. 1929-1933. Percentage of all cases

	(a) Under 5 years		(b) 5-14 years	
	i. Dona Ana County	ii. State of N. M.	i. Dona Ana County	ii. State of N. M.
1929	14.8	15.3	69.1	54.2
1930	11.5	17.5	57.7	52.4
1931	11.5	16.9	52.6	51.8
1932	12.0	15.3	57.3	54.8
1933	11.9	15.1	40.5	50.0

These figures show that the school children, at least those in Dona Ana County, have been achieving immunity more rapidly than the rest of the population. This cannot be said for the pre-school group. And yet, if our colleagues in general practice would persistently urge that the babies be immunized at nine months of age, the percentage of cases occurring in the under-5 group would show a steady and persistent decline. Let us concentrate on the school children and you concentrate on the babies, without of course promising in either case to limit our activities to any age groups, and let us see who gets there first!

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DERMATOLOGICAL CLINIC

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(Presented at Medical and Surgical Association of of Southwest in El Paso, Texas, December 8, 1933).

CASE I. Psoriasis. A young man presented small coin-sized plaques over the body, of several years duration, covered with silvery scales. An eruption of this type might be taken for a psoriasiform secondary syphilid. The absence of other symptoms, the chronicity, and the character of the scales justify a diagnosis of psoriasis. In this case an ointment 5 per cent salicylic acid and 5 per cent ammoniated mercury, was prescribed. The value of ultraviolet therapy was stressed. Autohemotherapy was suggested to inactivate the disease and stop spreading. Arsenic is contra-indicated in cases which show a tendency to spread.

CASE II. Alopecia Areata. This patient, a Mexican boy, age 18, presented two bald spots on the scalp, of several weeks' duration. Under local stimulating applications, the hair was beginning to return. These cases are usually associated with some nervous disturbances such as worry or shock. In this boy's case there was a history of emotional upset associated with an unfortunate love affair.

CASE III. Ringworm of the Scalp. A girl, 7 years old, presented numerous partly bald areas over the scalp, with broken hairs. The organism cultured was the microsporon lanosum which is the organism usually found in this section of the country. These cases are usually treated by epilation with x-ray. Where there are only a few lesions, they can be cured by epilating the hair with forceps and applying antiseptics, such as iodine.

CASE IV. Multiple Gummata of the Left Forearm. These lesions, occuring in a woman, age 35, on account of a linear distribution presented a striking resemblance to sporotrichosis. Frequent examinations for fungi were negative, the Wassermann blood test was positive, and the lesions were rapidly responding to antisyphilitic treatment.

CASE V. Granuloma Annulare. A negro woman, age about 30, presented numerous circular lesions on the arms and neck, varying from one-half to 1½ inches in diameter. The borders were slightly raised, with a tendency to clear in the center. These lesions had been present for several months. There was no particular itching nor other subjective symptom. This condition is probably a tuberculid. On examinatiion the patient was found to have pulmonary tuberculosis. The skin condition is much benefited by x-ray. This patient when presented was receiving gold and sodium thiosulphate with benefit.

CASE VI. Macular Secondary Syphilis. This patient had not received any treatment and presented a typical but faint early syphilid.

CASE VII. Papular Secondary Syphilis and Erythema Multiforme. This patient was shown to

distinguish the two eruptions. The erythema multiforme appeared on the hands during the course of treatment of the syphilis. On account of the possibility of treatment having caused the toxic eruption, all treatment was suspended for a week, during which time the eruption disappeared. A papular syphilid is prone to attack the palms and soles, whereas erythema multiforme is likely to be more noticeable on the extensor surfaces.

CASE VIII. Lupus Erythematosus. A Mexican woman, about 30 years old, presented an erythematous plaque of several years duration on the end of the nose. There were considerable atrophy and prominent sebaceous follicles, both of which are characteristic of this disease. This patient was being treated with bismuth locally and by intramuscular injections and was responding to treatment. Lupus erythematosus is a dangerous disease and the treatment should be under expert supervision. It is of toxic origin and all foci of infection should be disposed of if possible. The possibility of a serious exacerbation following removal of foci should be kept in mind. Gold and sodium thiosulphate is a useful drug in these cases, but it is apparently more dangerous than bismuth.

A CASE FOR DIAGNOSIS

Discussions by Drs. L. B. Baldwin, R. J. Stroud and Orville H. Brown, Phoenix, Ariz.

CASE HISTORY

E. G., a white male of 64 years of age, entered hospital December 29, 1933, complaining of indigestion for six months and loss of weight for six weeks. The working diagnosis upon admission was carcinoma, probably of the duodenum following an ulcer.

As a young man, he had symptoms which were considered indicative of an ulcer of the stomach or duodenum. He began to have pain in the stomach last July or August and this has become worse. The pain has been constant, relieved some by the taking of magnesia or soda, and by a milk diet. He has lost 13 pounds in the last six weeks and the skin has been dry. The pain has been in the epigastrium and to the right extending through into the back. Recently, there has been some nausea and vomiting.

P. E. Pupils normal; teeth gone; tonsils present and negative; moderate fairly firm enlargement of left lobe of thyroid which has been present without change for about 40 years. Lungs negative. Heart negative. The liver is not enlarged and there is an ill-defined mass below the costal arch between the midline and extending 20 inches to the right of the midline, extending down as low as the umbilicus which is very tender. The abdomen is otherwise negative. Genito-urinary negative; the prostate is not enlarged. Skin, dry, but otherwise normal. Bones and joints normal. Neuro-muscular normal.

Laboratory: Gastro-intestinal x-ray; no evidence of lesion in the stomach which emptied in six hours; pyloric canal spastic, but otherwise negative; the duodenal cap is deformed in shape and shows filling defects. X-ray diagnosis of post-pyloric ulcer with scar deformity of the cap. X-ray examination of the gallbladder following administration of dye was not conclusive; the shadow was faint, suggesting a functional disability of the gallbladder.

Gastric analysis: Free HC1 56; total aciditiy 78; occult blood positive; miscroscopic examination negative.

Urine: Amber, cloudy, acid, trace of albumin, no sugar, no casts, 3-4 pus cells, and occasional blood cell.

Blood: Hemoglobin 80; leukocytes 9,400; neutrophilic leukocytes 52; lymphocytes 48.

Course: T. 98-100; P. 70-128; R. 16-32.

On December 30, an exploratory laparotomy was performed under ether anesthesia at which the stommach and duodenum were found to be free ulcer or any other gross lesion. There were some old adhesions between the gallbladder and duodenum, and the gallbladder was enlarged, but there was no obstruction of the biliary ducts. The liver had over its surface numerous small, raised, firm, yellowish red areas, one of which was excised and sent to the laboratory for microscopic examination. The pancreas was examined, but no distinct enlargement was found although there were some enlarged lymph glands above it. The spleen was negative, as were both kidneys and adrenals. The small and large intestine were grossly normal.

On the sixth post-operative day there was a small hemorrhage from the upper end of the wound requiring no intervention. He was discharged on January 9, and sent home by ambulance. The course continued downhill, and death occurred on January 13, 1934. An autopsy was performed.

DR. L. B. BALDWIN

It is not often that one is given a clinical problem with all but the actual diagnosis presented on a silver platter and yet, in spite of the fact that an exploratory laparotomy was done in this patient and that a description is given of the surgical findings, there still remains a great deal to be explained.

The working diagnosis upon admission seems entirely reasonable in view of the age of the patient, the history of indigestion and loss of weight, and the apparent mass in the epigastrium discovered upon physical examination. But the x-rays seem to rule out carcinoma of the stomach as a reasonable diagnosis, because they seem to show a normal stomach but with scarring and deformity of the cap and possible disability of the gallbladder. Carcinoma of the duodenum is extremely rare and almost never occurs with or complicates duodenal ulcer.

At this point, it might readily have been assumed that the patient had a chronic duodenal ulcer with so much digestive discomfort, vomiting and pain that loss of weight and cachexia were to be expected. There is also a history suggesting ulcer in early manhood to add weight to this diagnosis.

So far the consultants all agree, I am sure, and nodding their heads wisely point to the high stomach acidity as added evidence for duodenal ulcer, No doubt the usual ulcer regime had been previously prescribed and in view of the rapid downhill course, an exploratory laparotomy with a gastro-enterostomy in mind was considered inevitable. It is easy to picture the surprise on the face of the surgeon when he looks expectantly into peritoneal cavity and finds no ulcer of the stomach and a normal intestinal tract throughout. It is reasonable to assume that the incision was enlarged in order that a better look might be taken. Then the liver is viewed and is found peppered with numerous small, firm, raised, yellowish-red areas, and the surgeon might be pardoned if he exclaimed, "What the devil is this?" In spite of having had considerable experience with carcinoma of the liver he has never seen a condition exactly like this one, and he subsequently waits anxiously for the

pathologist's verdict. He then possibly thinks aloud saying, "Tuberculosis? No, tubercles do not have this appearance and moreover there is no evidence of a widespread tuberculous process. The masses do not look or feel like abscesses and there has not been a febrile reaction." Still puzzled he goes on to say, "But why did the x-ray show a deformity of the duodenum?" And at the same time plunging his hand toward the gallbladder he lifts it into view and finds that it is enlarged and adherent to the duodenum. "Aha," he again exclaims, "chronic cholecystitis with traction so as to cause an apparent deformity of a neighboring viscus, something always to be thought of when interpreting gastro-intestinal x-rays." Still looking and pawing about he is in some doubt about the pancreas, in spite of the fact that it is not apparently enlarged, because there are enlarged lymph nodes above it. Everything else appears to be normal. Having decided to his complete satisfaction that there is nothing to be done about it, he sews the patient up, retires to the dressing room and has an interesting time discussing the various possibilities before the pathological report is available.

From the information at hand, it seems likely that we are dealing with malignant disease of the liver. Although no blood Wassermann was taken, syphilis can be ruled out on the gross appearance of the liver. In this condition, the organ is generally enlarged and although there may be numerous gummata, resembling carcinoma or sarcoma, they usually vary greatly in size and are accompanied by considerable scar tissue, and are not more or less uniform as described in this case. The spleen is often greatly enlarged and almost never normal in size, as found in this patient.

If the condition represents malignancy, the next question to be decided is whether the liver is primarily or secondarily involved. Primary carcinoma of the liver is rare, and primary sarcoma which is even rarer is usually a massive growth, while secondary growths are relatively common. Carcinomas often originate in the stomach, pancreas, gallbladder, or prostate. Sarcomas are usually due to metastases from primary growths in bones, adrenals, mediastinum, and in the case of melanosarcoma from the eye and the skin. This patient is rather old to have sarcoma and moreover from the record there is no evidence of a primary growth in the common sites. On the other hand, it cannot be entirely ruled out because a small growth readily overlooked may metastasize early and may sometimes start into life.

The diagnosis probably rests between primary or secondary carcinoma of the liver. In the latter case, an original focus was not discovered at time of operation. It is extremely unlikely that an involved pancreas could have been missed. For in this organ the growth is usually stony hard and contrasts markedly with normal, rather soft pancreatic tissue. From this region metastases usually occur late. Here again, however, the rare exception must be thought of, particularly in view of the enlarged lymph nodes discovered above the pancreas. The surgeon no doubt had this thought in mind and was unable to come to a definite decision.

Carcinoma of the gallbladder must always be thought of, particularly as it is a relatively common disease. It usually starts in the fundus projecting from the mucous surface into the interior of the gallbladder. But surely, simple palpations should reveal the presence of the gallbladder tumor as there is thickening of the wall which is very firm to the touch, and often stony hard. It cannot be denied however, that there was some disease of the gallbladder since there were adhesions binding it to the doudenum. The high gastric acidity also suggests possible gallbladder pathology.

The kidneys felt normal and although a trace of albumin was found in the urine, there is nothing definite to suggest renal disease.

The prostate was also not incriminated.

In spite of its rarity, the diagnosis seems to narrow itself down to primary carcinoma of the liver.

Malignant disease of the thyroid always has to be thought of. Carcinoma may metastasize early without any local signs, except the presence of an adenoma. On the other hand, this patient has had an adenoma for 40 years which had increased in size and consequently this diagnosis is extremely improbable.

The thorax as a primary source of neoplasm has been pretty definitely ruled out by the negative history and physical examination.

The history is quite characteristic of malignant disease of the liver. There was a vague preliminary period of indigestion, with pain in the stomach and right upper abdomen. Latterly there was loss of weight, but not usual anemia. It is interesting that there was no enlargement of the liver, because in malignancy the liver is usually greatly enlarged. This makes one suspicious of a primary growth elsewhere, even though none could be found upon exploration, particularly as in at least one-third of the cases the primary growth is latent. Primary growths are often single and cause uniform enlargement of part of the liver, and they grow more rapidly.

My diagnosis is:

(1) Secondary carcinoma of the liver, arising from the gallbladder or possibly the pancreas.

(2) Primary carcinoma of the liver.
Chronic cholecystitis,
Possible chronic nephritis.

DR. R. J. STROUD

The case as given presents a practically negative examination and history except for the right upper quadrant of the abdomen. The examinations given are mostly of a routine nature and only special examinations relating to that region were done.

The working diagnosis is carcinoma probably of the duodenum and described also as following ulcer, although some will dispute the fact of ulcer and cancer being related.

The patient himself is an old man with a description of pain of the stomach which has become worse for four months. Associated with this pain is nausea and vomiting recently. The pain is constant, radiating to the back from the right hypochondrium and epigastrium. He had stomach symptoms as a young man attributed to ulcer of the stomach or duodenum. The present pain was relieved by alkalis and milk diet. Dry skin and a loss of 15 pounds in 6 weeks are described.

X-ray diagnosis was that of a post pyloric ulcer with scar deformity of the cap, spastic pylorus and a sluggish gall-bladder.

The blood is not remarkable. Leukocytes are not increased above normal although the lymphocytes are relatively increased.

Operation revealed a liver with numerous small raised areas, firm and yellowish red over the surface. Some lymph glands were enlarged above the pancreas. The gallbladder was enlarged although probably as much as the mass described before operation. The liver is not described as enlarged and the mass thought to be there before operaton was not spoken of when the abdomen was explored. Neither do we know just how many of the nodules were present over the liver surface, their size in any exactness nor whether they were more or less confluent or discrete.

To sum, we must find a condition serous enough to cause the death of a patient, after six months of stomach pain, that looks like a stomach or duodenal ulcer by x-ray diagnosis, that loses a patient weight

in six weeks, that is an old man's disease, and in which every finding is negative as a cause of death except those found at exploration, which rules out everything except a liver whose size at operation is not described and with some enlargement of glands above the pancreas, and with that organ not distinctly enlarged to palpation. The only other clue is that the lymphocytes are relatively increased. A tender mass described before operation is left to be guessed at by the diagnostician. No jaundice is described.

To begin, I take it that the liver was not enlarged upwards and that the mass if present at operaton, was the liver. Just what could cause the condition of the liver and the lymph glands to the right and above seems to be the only basis upon which to base an opinion. We have the choice of (1) new growth; (2) tuberculosis; (3) syphilis; (4) some other condition, rare if found in this way, such as actinomycosis.

To take up the least likely first, cases of actinomycosis generally occur in younger people, also it is usually manifested elsewhere in the body and the stomach, if the primary source should have shown changes commensurate with that disease if it were a primary focus. It may begin as a stomach ulcer and generally does and gives all of the same symptoms. The liver movement is secondary and can have just such a picture, if the process is deep with smaller manifestations near the surface. It must be thought of in any case.

Syphilis may have manifested itself in this way. No Wassermann was taken and the patient is evidently free from other stigmata, or this would have been done. If a syphilitic ulcer of the stomach had been present it would have shown as an induration or a gumma at operation. However, cases of syphilis can simulate any disease and the stomach could have given all of those symptoms and these small masses could well have been masses of gummata or syphilides. The pain in the stomach could have been a syphilitic one and many an operation has been done on a syphilitic to the chagrin of the surgeon. Syphilides could have been placed in the liver just as was seen at the time of operation. It can be ruled out in that other manifestations should have been present. The neuro-muscular examinations were normal as well as the eyes. So we put syphilis down as only a possibility. It usually does not kill like this.

Tuberculosis of the liver is generally secondary to some other disease, and usually the disease is massive in other places before the liver is invaded, except in those cases of miliary tuberculosis where all organs are invaded. Primary tuberculosis is a a rare disease, but can be present. It seems that he would have run a far more febrile course if it had been tuberculosis, and yet the thing stimulates tubercles from the description of the surface of the liver. The loss of weight, the high lymphocyte count and all of the picture looks like a tuberculosis, including the loss of weight, except that we would look for tuberculosis in some other organ also, and this was absent.

This leaves us with the greater possibilities of new growths. Carcinoma of the liver is generally secondary to the disease in some other organ, generally the stomach or gallbladder. Taking the slightly febrile course together with loss of weight and with dry skin coupled with the age of the patient it is far more probable than any other causes above mentioned. The course seems a bit too quick and yet there could have been a primary lymph gland carcinoma which worked on the general system as a toxic thing and suddenly it overcomes him when the liver was well impregnated with the cancer nests. Even if the stomach and intestines are described as grossly normal, a small pediculated carcinoma could have been present in the upper part of the duodenum and the spread could have been from there. Such a condition would have given the false x-ray interpretation. About the cancer death coming on so fast, it is very possible that an operation at this stage would have mercifully ended the thing, as it generally does in these cases. When operation intervenes the course of cancer is thrown out of balance and generally a speedy exit comes, when, if left alone, the thing would have prolonged about the usual time. Carcinoma is never ruled out because of the findings. Fifty per cent of carcinomas do show more or less jaundice. This case does not.

The other possibility of new growth is sarcoma. Against the thing is the fact that it is a disease of younger people, although the last case I saw from a primary lymphosarcoma of abdominal glands was in a man of 64. Sarcoma is no respector of time or place, and just as we are thinking of carcinoma as quite a prevalent disease below the age of 45, the older dead line, so we must make up our minds that sarcoma is a disease of many older people. The fact of the glandular enlargement above the pancreas means a beginning focus and the liver is very likely to be secondary to this, and the surface of the liver would give just this appearance, with only a moderate enlargement of the liver as compared to carcinoma in general. I am more inclined to think of this as a sarcoma, of the original lymph sarcomatous type than a carcinoma. The fact of only one organ and lymph glands being in the picture makes me think more of the possibility of a sarcoma than any other thing mentioned, and it would only have to be differentiated from the first cousin, Hodgkin's disease if this premise is correct. Operations hasten the exit as in the other, and the loss of weight is just as would be expected, together with the slight febrile course, lack of higher white count than normal and the lymphocytes out of proportion. The stomach symptoms could be accounted for by pressure on the cap or adhesions to the same from the glands and throw the x-ray man off to this extent. The pain going through the back seems more like some pressure greater than usual in that location. Growing lymph glands with sarcoma could supply this pain.

I did not mention hepatic cirrhosis as a possibility, for the liver was not enlarged in all directions and the surface is better described as a hob nail liver than one in which definite areas stand discretely up as different tissue from the rest microscopically. If it should prove to be cirrhosis I shall be much surprised from the description of the light febrility and rapid demise.

I can visualize the possibility of the lymp gland enlargement being a primary abdominal focus of Hodgkin's disease and that other deeper glands of the mesentery could be enlarged and not seen at the time of operation. The liver could well take up the burden of the process and death result in the same way, without the usual enlargement of other glands. I wonder what the innocent left lobe of the thyroid really means? It may not have changed of itself in thirty years, but the thing was never really ruled out of things. It could be the key to any picture of lymphoid new growth.

My final diagnosis is that of a lymphosarcoma, either a Hodgkin's type or not, depending on the pathologist's report. Everything else but carcinoma is only a possibility, but fungi like actinomyces must be thought of. Carcinoma is never ruled out in any new growth without the pathologist.

DR. ORVILLE H. BROWN

Based upon the facts of age (64), indigestion for a period of six months, with previous history sup-

(Continued on page 104)

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THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST.

The matter of reorganizing the Southwest organization is in the hands of a special committee composed of the president (Dr. W. A. Gekler), president-elect (Dr. David M. Davis), and board of trustees (Drs. E. Payne Palmer, P. G. Cornish and F. D. Vickers). This journal has not yet had intimation of their activities, but we know their program will include the securing of a membership of five hundred. The 1934 dues were set back to $3.00, to encourage this membership campaign.

As soon as arrangements can be made, a special edition of this journal will be published, devoted to the medical profession of northern Mexico. This will be partly in Spanish. A number of contributions from hospitals in Mexico have been promised and some already submitted.

This committee has the task of drafting a new constitution, of formulating the type of annual meeting, of carrying on the membership campaign, and of forwarding the purposes and program of the Association in every possible manner. Save them trouble by sending your application for membership in the Association, before being asked.

THE ANNUAL NEW MEXICO MEETING

This meeting will be July 19, 20 and 21, at Las Vegas and NOT in May, as we mistakenly stated in last month's journal. Lacking definite information we assumed it would be in the usual month (May).

Dr. Gellenthien of Valmora, Chairman of the Program Committee, writes that they chose the later date in order to allow men from the warmer parts of the state to combine a vacation in the cooler altitudes with the attendance at the meeting. Their program is already well under way, and tentative list of speakers will be announced next month. Among them will be Dr. C. W. Mayo, who will read a paper on Appendicitis; Dr. L. A. Buie, who will read a paper on rectal fistula and hemorrhoids; and Dr. Frank B. Kelly, of Chicago, who will have a paper on Pneumonia. Scientific exhibits will be a feature of this meeting, and a public health meeting will be held. Watch for complete program in May or June.

THE ARIZONA STATE ASSOCIATION MEETING.

The Arizona State Medical Association will be held later this year than usual. It will be in Prescott and the dates are June 7, 8 and 9. Since the American Medical Association meeting in Cleveland starts on June 11th, it is probably not expected that doctors will attend both meetings. We are informed that Dr. Fitzgerald, Chairman of the Program Committee, has the program well under way with an abundance of high class material. More detailed announcement will be made next month. Of some things we can be certain; no more delightful place exists than Prescott in June, and no more cordial group of doctors can be found anywhere than the Yavapai County Medical Society.

THE SOUTHWEST

For many years, the medical profession within the geographical area which includes New Mexico, western Texas and Arizona, have been endeavoring to establish that district as a unit for organization of medical activities. Another forward step was taken when the American College of Surgeons definitely recognized the "Southwest District" and elected officers of that unit, at the recent meeting held in Phoenix. The district corresponds to that covered by the Medical & Surgical Association of the Southwest.

The Southwest District Meeting of the College of Surgeons, this year, was organized somewhat hastily and defensively, when it was learned that Arizona had been included in the Southern California district, at THEIR (California's) request. The Fellows of the College in Arizona had not been consulted, and when they protested, the Southwest District meeting was arranged. Although insufficient notice was given to secure much attendance from El Paso or New Mexico, the recognition of this geographical area by the College is a long step toward the establishment of a medical autonomy in the Southwest.

The meeting just held was a very excellent one, with eminent surgeons present to assist in clinics, scientific meetings and hospital conferences. The two outstanding features were the Cancer Clinic held by Dr. Greenough, and the Public Health meeting on Friday evening, March 16. This latter meeting was held at the sand in attendance. We hope to give a de- High School auditorium with about two thoutailed record of this conference in next month's journal

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SUGGESTED RELIEF FOR PROFESSIONAL MEN.

We have received from The Lawyers Club of Los Angeles the resolutions quoted below:

Whereas, the Government of the United States has been extending credit to many classes of the community which have been unable to secure loans or extensions in the ordinary course of business;

Whereas, no such aid has been extended to professional men;

Whereas, professional men, notably lawyers and doctors, must render service when required regardless of the ability of the client or patient to pay;

Whereas, most members of the legal and medical professions have rendered such service during the years of economic depression and now have upon their books charges for such service against clients and patients who are willing to pay but who are unable to secure funds, despite the ownership of property;

Whereas, this condition has resulted in placing said professional men in serious financial straits, in that they must pay in money for certain of their facilities and the support of their families while unable to collect sufficient sums in money from their debtors; and

Whereas, the debtors of the professional men, in the aggregate, consist of the most responsible portion of the community, whose credit in the aggregate is the foundation of all local credit;

Be It Resolved by The Lawyers Club of Los Angeles that the Congress and the President be importuned to act promptly for the relief of such professional men by setting up a system whereby the debtors of professional men, at least lawyers and doctors, may arrange long credit terms upon obligations that will be discounted at a low rate of interest by a Federal agency, thus releasing to the professional men amounts of cash in return for the credits which are now but frozen assets: and

Be It Further Resolved that copies of the resolution be dispatched to the California delegation in Congress, the President of the United States and that the commitee take such other steps to foster the spirit of the resolution as it or the Board of Governors may be advised.

This is brought to the attention of medical organizations in the Southwest with the suggestion that they give the matter serious attention.

DONTS

W. R. JAMIESON, M. D.
El Paso, Texas

Don't promise your gonorrheal patient that he will be cured in a certain time. There is no royal road to the cure of gonorrhea; the crowned head and the deadhead suffer equally.

Don't forget to examine the prostate when you are seeking foci of infection.

Don't forget to ask your syphilitic patient if his skin itched after the previous injection of salvarsan; a positive answer may avert an exfoliative dermatitis.

Don't treat the sexual neurasthenic as a nuisance. His troubles are very real to him and should excite your sympathy and understanding. Moreover, he usually has the means to pay for your advice.

NEWS ITEM

If a sufficient number of candidates are interested, the American Board of Ophthalmology will conduct an examination at Butte, Montana, July 18, 1934, at the time of the meeting of the Pacific Coast Oto-Ophthalmological Society.

Applicants for the certificate should immediately communicate with the Secretary, Dr. Wm. H. Wilder, 122 S. Michigan Ave, Chicago, Ill.

A CASE FOR DIAGNOSIS

(Continued from page 101)

porting the diagnosis of ulcer, a loss of 13 pounds in six weeks, and a suspected mass in right upper quadrant, the existence of carcinoma of the duodenum would seem to be a possibility if not a probability. Carcinomas of the duodenum, however, are rare. The statistics of Geiser indicate that about four per cent of intestinal carcinomata occur in the duodenum. He collected data upon 71 cases; 11 were in first portion, 51 in second and nine in the third. Up to 1922 only five cases of duodenal carcinoma had been reported from the Mayo Clinic. Ewing holds that carcinoma of the duodenum may develop upon an ulcer base; others develop at the ampulla of Vater and in the distal portion of the duodenum. Cole on the other hand doubts that ulcers ever become cancerous Evarts Graham says the gross anatomy and symptoms of a cancer upon a duodenal ulcer are similar to those from a pyloric cancer. Stenosis and adhesions are common Metastases are usually early and widespread. When the cancer is in the second portion it is about the ampulla of Vater and jaundice usually is early and constant, although it may be absent. Dilation of the biliary and pancreatic ducts usually occurs.

Carcinoma of the distal portion of the duodenum is extremely rare; it produces strictures with dilation of the upper duodenum and stomach and vomiting of large quantities of bile, with gastric symptoms. The operative findings undoubtedly rule out the possibility of a primary cancer of the upper right qudrant. The small areas or nodules found in the liver must be explained on other basis.

With the history of symptoms suggesting ulcer of the stomach or duodenum and the x-ray evidence of filling defects, and the deformity of the cap and the operative findings of adhesions about the duodenum it seems that the former diagnosis of duodenal ulcer must have been correct.

The lymph nodes above the pancreas drain the duodenum and gallbladder as well as the pancreas and their enlargement could be accounted for by the old inflammatory process which had affected the duodenum. The enlarged gallbladder suggests infection which might have been recent and such infection might enlarge the lymph nodes in this region or whatever caused the nodules in the liver might have been responsible. The mass which was thought to have been palpated might have been the enlarged gallbladder or possibly the adhesions gave the impression of a mass. The small firm raised yellowish-red areas observed in the liver must be metastases—inflammatory or new growth, probably from a source outside the abdomen as a thorough search of the entire abdomen was evidently made at the time of the operation. The description of the areas suggests no special etiology feature to me.

A careful reading of the history gives only the suggestion of the thyroid as a possible source of a new growth but there has been no apparent change in it during 40 years of its existence.

There is nothing in the record to suggest infection. The temperature, it is true, is slightly elevated. The leukocyte count is essentially negative however, except for an increase of lymphocytes and a reduction of neutrophiles. This might suggest or at least be in accord with expectations in malignancy, and in tuberculosis and other conditions apparently not present. There is no reason to even suspect tuberculosis so far as I can see, as tubercles are fairly characteristic in appearance; evidently the nodules seen in the liver did not suggest tubercles.

With prostate and genito-urinary tract negative it seems necessary to return to a consideration of the thyroid. Tumors of the thyroid behave in a peculiar manner at times. Bartlett and also Boyd say cancer of the thyroid is more common than ordinarily supposed.

Eberts, Fitzgerald and Silver hold that malignancy arises generally in previously existing and apparently benign tumors of the thyroid more commonly on the right than the left. An encapsulated adenoma may have extensive malignant changes before the capsule has become involved. These authors discuss five types of malignant tumor of the thyroid. Malignant adenoma, carcinoma, epithelioma, endothelioma, and sarcoma. They divide the malignant adenoma into two divisions: The adult type and the papillomatous type. They divide the carcinoma into simple, medullary and scirrhus.

Pemberton and Fricke recognize four main types of malignancy of the thyroid: papillary, adenocarcinoma, adenocarcinoma in adenoma, diffuse adenocarcinoma and spindle-cell resembling sarcoma.

Allen Graham's classification is more simple and serves all practical purposes, says Evarts Graham in his Surgical Diagnosis. He recognizes a scirrhus carcinoma which is similar to these tumors elsewhere; he also has the papillary adenocarcinomata and malignant adenomata. The diagnosis, classification, and determination of malignancy, according to Allen Graham of sirrhus and the papilliferous adenocarcinomata rests upon the usual pathological standards.

The malignant adenomata develop from benign adenomata and the question is the determination of what constitutes malignancy. Malignant adenomata are multiple type tumors, according to Allen Graham, and invariably invade the blood vessels. He says that whenever the cells are found in blood vessels the diagnosis of carcinoma is definite. When these growths arise in adenomata which have no capsules they follow the tissue plans and spaces. reaching the lymphatics and hence metastasize mainly to the lymph nodes draining the thyroid. As long as the growth stays within the capsules there is no invasion of the lymphatics and hence metatasista kes places soley by the blood stream. The growth within the blood vessels, usually veins, is toward the heart, and cases of tumor thrombosis of the right auricle have been reported. The cancer tissue has been found not infrequently in the thyroid and jugular veins and even in the superior vena cava and innominate vein. Parts of the growths frequently become separated and are deposited in distant parts of the body. In this connection I would emphasize the point made by Allen Graham that, in encapsulated tumors without other evidence of malignancy and the microscopic appearance is not sufficient for a decision, the findings of an invasion of blood vessels by the cells will make a diagnosis.

Howard M. Clue says that a firmness and fixation of the thyroid mass and a recent increase in its size should make one suspect a malignancy.

W. W. Mover writes that it is well recognized clinically that an inconspicuous or latent thyroid growth may produce extensive remote metastases the source of which may be unsuspected. He reported two cases in which the general carcinomatosis condition was recognized long before it was even suspected that the thyroids were the origin of the growths. In one case it seemed advisable to remove the thyroid because of toxic symptoms from it. Routine examination revealed the presence of malignant adenomata. Then it was concluded that this was the cause of the metastases previously discovered. In the other case a part of the metastatic tissue obtained by a laminectomy, for a supposed cord tumor, when examined showed tissue resembling thyroid.

Ewing gives the following statistics on the fre-

quency of the invasion of the variolus organs by metastases from thyroid malignancies: Of 238 cases, the lungs were affected in 129, the bones in 66, the liver in 36, the kidneys in 20, pleura in 16, brain in 12, and other regions in 13.

My diagnosis in this case is malignant adenoma of the thyroid with metastases; healed doudenal ulcer; functionally diseased gallbladder.

Autopsy Report
DR. H. P. MILLS

Subject is a poorly developed white male, presenting recent operative scar in right upper quadrant and a mass in the neck which is round, smooth and firm.

On opening the abdomen there was a small amount of fat and a small amount of fluid in the abdomen. Intestines were collapsed, stomach dilated. Liver was found to project slightly below the costal margin and was seen to be studded with round, whitish, elevated areas which varied in size from several millimeters to several centimeters. The masses were discrete, and were evidently metastases from some distant focus. They were found throughout the substance of the liver.

The stomach and intestinal tract were apparently normal. No ulcer of the stomach was found.

The pancreas was found to be involved in new growth; the distal one-third was enlarged, indurated and nodular fairly well demarkated from the remainder of the pancreas.

The kidneys showed several deposits of metastatic growth in the cortex. These were small, the largest being less than a cm. in diameter. The lungs are expanded, normal amount of pleural fluid, there is some reddening and firmness in the posterior portion of each lung, and on the surface of cut section the lung presents very numerous areas of new growth and there was marked enlargement of mediastinal lymph nodes.

The thyroid was removed en masse and the left lobe was found to be large, firm, rounded and well encapsulated. On cut section in the left lateral lobe there is a new growth; about 2½ cm. in diameter of grayish color with soft degenerated material in center. There is considerable of the normal thyroid tissue preserved and the tumor does not seem to infiltrate all the tissue of the gland. The tissues of the neck are not infiltrated by the new growth.

The heart findings showed no gross lesions.

The urinary bladder was empty and the prostate not enlarged; gross section showing no evidence of new growth.

Pathological diagnosis: Primary carcinoma of the thyroid gland. Metastases to lungs, mediastinum, liver, kidneys, and pancreas.

EL PASO COUNTY MEDICAL SOCIETY

February 13, 1934

(Reported by Dr. Leslie M. Smith, Secretary)

Case of Intracapsular Fracture of the Hip: F. C. Goodwin, M. D., El Paso, Texas.

Classification and Treatment of Arthritis: N. D. Buie, M. D., S. S. Munger, M. D., Marlin, Texas.

The El Paso County Medical Society met February 13, 1934, at Hotel Hussmann, Dr. E. W. Rheinheimer, presiding.

A letter was read from the Arizona State Medical Association requesting that the El Paso County Society send a fraternal delegate to their meeting in Prescott, June 7th, 8th, and 9th.

Dr. Raymond P. Hughes of Anthony was elected

NO DOUBT many little patients would like to "tip off" the doctor beforehand—milk can become so monotonous—the sameness of taste—the sameness of color.

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to membership. The application of Doctors Y. M. Milam, M. L. Alexander, and G. S. Brooks for membership were read and referred to the Board of Censors.

Dr. Frank C. Goodwin was elected delegate to the Arizona State Medical Association meeting.

Dr. F. C. Goodwin presented a case of intracapsular fracture of the hip treated with the Smith-Peterson pin.

Dr. N. D. Buie, assisted by Dr. S. S. Munger, both of Marlin, Texas, addressed the society on the "Classification of and Treatment of Arthritis," illustrating the talk with lantern slides. The classification of Cecil was followed. The paper was discussed by Dr. F. C. Goodwin and in closing by Dr. Buie.

The meeting adjourned at 10 p. m.

The Nichols Sanatorium. — In Savannah, Mo. there has been for some years an institution known as the Dr. Nichols Sanatorium for Cancer. It was founded by one Perry Nichols who held a diploma from the University of the South Medical Department, Sewanee, Tenn., 1901, and who died in 1925. The Nichols concern, which, of course, uses the escharotic treatment, is the subject of an article by the Bureau of Investigation of the American Medical Association. According to the statement that has been made for many years, both before Nichols died and since, this has been vaguely described as: " . . . a double compound, about four times the strength of chloride of zinc plaster, or the arsenical or Marsden's paste, and acts with decidedly less pain." In fifty-five cases of alleged cures of cancer by the Nichols Sanatorium that were investigated, it was found that all but three of the cases had been diagnosed as cancer, not by independent physicians, but by the Nichols concern itself. In the three patients whose cases were diagnosed as cancer by physicians, no microscopic examination had been made. Many persons, especially those past middle age, who develop benign growths, assume that such growths are cancer and on their own responsibility go to these cancer-cure institutions that advertise that they do not use the knife. There the patient is told that the condition is cancerous; the growth is eaten out with caustics, the wound heals, and the patient goes back to his home a living advertisement for the "cure" of a "cancer" that never existed. (Jour. A.M.A., December 2, 1933, p. 1817).

Hippuran. — The Council on Pharmacy and Chemistry reports that Hippuran is a product of the Mallinckrodt Chemical Works, proposed by Swick for intravenous and for oral urography. Its chemical constitution is stated to be sodium ortho-iodo-hippurate. Soduim ortho-iodo-hippurate contains 38.8 per cent of iodine; it is said to be soluble in less than its own weight of water and to be stable in aqueous solution. It was chosen as a promising agent for visualizing the urinary tract, in view of the fact that hippuric acid normally occurs in the urine following the ingestion of benzoic acid, representing a conjugation of benzoic acid with glycerine. Usually from 10 to 15 Gm. has been administered by vein in 40 per cent aqueous solution over a period of five minutes. No reactions have been noted except a sensation of generalized warmth, such as has been reported with other products used for intravenous pyelography. With a dose of 30 Gm., occasional vomiting has occurred. By the oral route, diagnostic pictures are reported to have been obtained 90 and 135 minutes after

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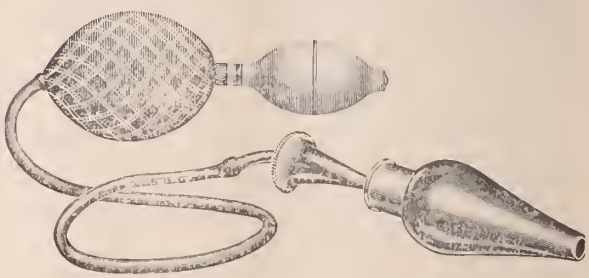

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administration, in seven of fourteen cases. As the product has not yet been sufficiently widely employed adequately to determine its value, the Council has voted to defer further consideration of Hippuran until more evidence has accumulated with respect to its clinical usefulness, at which time the product will be examined by the A.M.A. Chemical Laboratory. (Jour. A.M.A., December 9, 1933, p. 1879).

Another Hay Fever Treatment—The Leach "New Filtration Method" in Hay Fever.—The "New Filtration Method" in the treatment of hay fever and allied conditions, said to have been originated by a Dr. Edwin S. Leach of Junction City, Kan., is discussed by the Bureau of Investigation of the American Medical Association. The "treatment" which constitutes what Dr. Leach calls his Filtration Method is essentially that of first swabbing the nasal tissues with a 2 per cent solution of cocaine and then the application of "Rhino-Form Single Strength." The nose and throat are then sprayed with an oil spray. After from one to three days treatment of this kind, "Rhino-Form Double Strength" is used. If this brings about a "profuse bloody discharge," this is said to indicate a mere "sloughing away of all superfluous tissue and is in no way indicating harm being done to the membranes." In some of his mimeographed material Dr. Leach has vaguely described "Rhino-Forms" as a "silver solution obtained by treating silver nitrate with an alkaline proteid." Dr. Leach was written to by the A.M.A. Chemical Laboratory, inquiring whether Rhino-Form was or was not a secret formula, and asking, if it were not, whether Dr. Leach cared to furnish an accurate definition of its composition, stating the amount of silver, ionic and non-ionic, as well as the amount of silver protein. No information was furnished. The A.M.A. Chemical Laboratory analyzed Rhino-Form (Double Strength) and concluded that it consists essentially of a "neutral" solution of silver nitrate of approximately 7 per cent strength and a small amount of a silver-bearing solid, possibly a silver protein compound and possibly some silver oxide; according to the label, the solid is not for therapeutic purposes. (Jour. A.M.A., December 9, 1933, p. 1897).

Contamination of Fruits and Vegetables with Toxic Insecticide Spray Material.—The Committee on Foods reports that distributors of fruits nd vegetables that may bear toxic material are obliated to remove such poisonous contaminations before they enter commerce for retailing to the public, or to warn food manufacturers of the possible presence of the spray residue. Food manufacturers using fruits and vegetables should take proper precautions either to assure the absence of toxic spray contaminations or their removal before the products are prepared or packed for consumption. Distributors of fresh fruits and vegetables and manufacturers of foods containing these products bear a serious responsibility to the public that their products as presented for consumption are entirely wholesome; carelessness or disregard of this public health responsibility is criminal. (Jour. A.M.A., October 21, 1933, p. 1316).

Lash-Lure.—There have been sixteen cases of severe untoward effects reported following the use of a single product called "Lash-Lure." This preparation is an aniline dy having for its base probably either paraphenylenediamine or paratoluylenediamine or some closely related substance. Every physician, and practically every responsible beauty parlor, knows the risk that is run in the application of dyes

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of the aniline type to the hair of the scalp. It has long been good beauty parlor practice to insist that persons who are to be subjected to an aniline hair dye should be tested for sensitivity to that product. Because of the irritating effects of such dyes, there is no justification for the use of so dangerous a substance around the delicate tissues of the eye. Cosmetics are under no national control. The Lash-Lure tragedies emphasize the need of some sort of nation al control over the sale of cosmetics. (Jour. A.M.A., November 11, 1933, p. 1566).

Vannay.—One of the latest stars in the firmament of obsesity-cure quackery is a product called "Vannay." It is put on the market by Bio Medico, Inc., of New York City. Bio Medico is a subsidiary of McCoy's Laboratories, which puts out the so-called McCoy's Cod Liver Oil Tablets. In addition, to Vannay, the obesity cure, Bio Medico, Inc., also puts out a laxative, "By-Kem." There seems to be a remarkable similarityy between Vannay and By-Kem if one is to judge by the advertising material. The manufacturers state that the principal element in Vannay is taurolactic acid. They also speak ambiguously of sodium taurolactate, and while the advertising matter does not acutally declare that sodium taurolactate is the essential ingredient in Vannay, a representative of the Vannay concern is reported to have stated that it is. According to the advertising circular, there is in addition, "an infinitesimal amount of copper," together with secretine and a "blood serum lipase." There is nothing in the alleged composition of this "patent medicine" to produce a reduction in weight except those elements that stimulate peristalsis. The introduction of secretine into the formula indicates that the "group of brilliant doctors of science and medicine" who are alleged to have developed Vannay are not sufficiently brilliant to have learned that secretine, whe ntaken by mouth, has no activity. The facts of the matter are, whatever reduction in weight may follow the use of Vannay is due to one or both of two factors: First, the laxative action ("increase the dose until your bowels move twice a day with a clocklike regularity") and, second, the requirement that the victim, in taking it, should diet. It hardly seems to have been necessary to call upon "a group of brilliant doctors of science and medicine" to establish such an obvious triusm. (Jour. A.M.A. November 18, 1933, p. 1658).

Vitamin C Therapy.—In the majority of cases, guinea-pigs maintained on a diet deficient in vitamin C will develop ulcerative lesions of the intestine, if fed daily doses of tuberculous sputum. If this deficiency diet is supplemented by an adequate amount of tomato juice (vitamin C), however, the animals almost invariably remain free from intestinal tuberculosis. Since the guinea-pig and man are apparently identical in their vitamin C requirements, McConkey and Smith of the New York State Hospital for Incipient Pulmonary Tuberculosis conclude that tomato juice therapy has a verifiable rationale in certains forms of clinical tuberculosis. (Jour. A.M.A., November 25, 1933, p. 1731).

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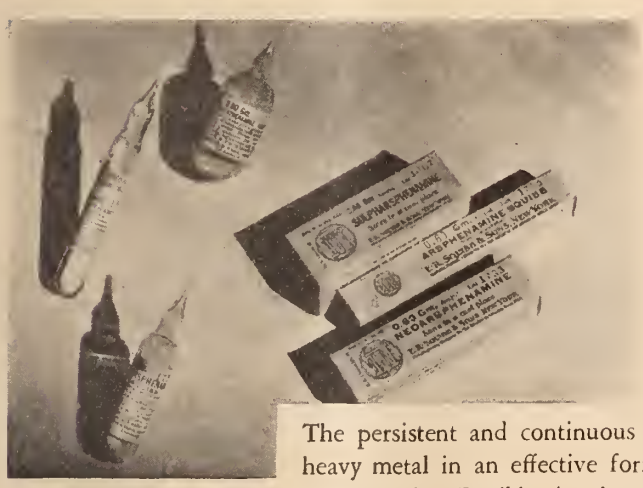

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FOR TABLE OF CONTENTS—SEE ADVERTISING SECTION PAGE 1

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In gastrointestinal disorders, "Dextri-maltose has been preferred to the other sugars as apparently less irritating."—*E. Cassie and C. Cox: The examination of the gastric contents in infants, with some considerations as to the value of lactic acid milk in infant feeding, Lancet, 2:322-325, August 14, 1926.*

"As to the kind of extra carbohydrate to be added, whether lactose or maltose, I believe dextri-maltose to be better in general in cases of fat indigestion (infantile atrophy)."—*C. H. Dunn: The Hygienic and Medical Treatment of Children, Southworth Co., Troy, New York, 1917, V. 1, p. 418.*

In the treatment of decomposition, "The period of repair may be shortened by giving suitable additional food; the best, probably, being buttermilk to which carefully regulated proportions of dextrin and maltose preparations or malt soup are added."—*E. Feer: Text-Book of Pediatrics, J. B. Lippincott Co., Phila., 1922, p. 284.*

In infantile atrophy, "The carbohydrate should be increased by gradual addition of dextrimaltose.

"Malt soup or dextrimaltose (Mead's) should be added in teaspoonful or more doses to each feeding until the point of carbohydrate tolerance is reached."—*L. Fischer: Diseases of Infancy and Childhood, F. A. Davis Co., Phila., 1925, V. 1, p. 285.*

In the case of a premature infant, "Dried milk with water was given, which later was changed to whole milk, 14 ounces; water, seven ounces, and dextri-maltose No. 1, one and one-half ounces. Seven feedings of three ounces each every three hours was given. The above feeding was retained. The infant gained eight ounces at the end of the first week."—*L. Fischer: Clinical notes in a series of premature infants, Arch. Pediat. 44:227-231, April, 1927.*

In the treatment of decomposition, "As a rule it is best to start with 2 to 2½ or 3 ounces of albumin milk to the pound weight in 24 hours; the sugar to be added is in the form of a maltose-dextrin mixture. One should never delay too long in adding this."—*C. G. Grulee: Infant Feeding, W. B. Saunders Co., Phila., 1922, p. 265.*

With reference to hypotrophy, "In mild cases, the addition of dextrimaltose instead of cane or milk sugar may be sufficient to obtain a gain in weight."—*C. Herrman: The treatment of nutritional disorders in artificially-fed infants, New York M. J. 114:158-160, August, 1921.*

In athrepsia "The carbohydrates are usually added in a slowly fermentable form, such as the maltose and dextrin compounds, which are usually started by the addition of four grams per kilogram (1/15 ounce per pound) and increased until eight grams or more per kilogram (¼ ounce per pound) of body weight are added."—*J. H. Hess: Feeding and the Nutritional Disorders in Infancy and Childhood, F. A. Davis Co., Phila., 1928, p. 278.*

Concerning the treatment of marasmus, "When the stools have become smooth and salve-like, carbohydrate, in the form of dextrimaltose, may be gradually added up to the limit of tolerance."—*L. W. Hill: Practical Infant Feeding, W. B. Saunders Co., Phila., 1922, p. 281.*

In the feeding of prematures, "As soon as there is a hesitation in the gain in weight, dextrimaltose No. 1 is substituted for the dextrose, in the same amount in the mixture, with almost invariably a gain in weight."—*F. B. Jacobs: Relation of irradiated food substances and ergosterol versus cod liver oil in childhood nutrition, Pennsylvania M. J. 35:164-167, Dec., 1931.*

"A spasmophilic baby on bottle feeding should receive a limited amount of milk—a pint, or at the most 24 ounces in the 24 hours—to which cereal gruel and some form of sugar is added, preferably one of the malt dextrin preparations; also the early addition of other foods than milk to the baby's diet."—*M. Jampolis: Infantile spasmophilia, Interstate M. J. 25:652, Sept., 1918; abst. Arch. Pediat. 35:891, Nov., 1918.*

In cases of malnutrition and indigestion, "The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. When there is a tendency to looseness, I have used the preparation known as 'dextri-maltose,' for the extra carbohydrates; . . ."—*M. Ladd: Further experience with homogenized olive oil mixtures, Arch. Pediat., 33:501-512, July, 1916.*

In pyloric stenosis, "With low dextrose tolerance, a maltose dextrin preparation may be added in whole or in part. Even where the dextrose is well tolerated and gain in weight has ceased, impetus to the weight ontake may be given by the addition of a maltose dextrin preparation."—*D. J. Levy: Pyloric stenosis and pylorospasm of infancy with especial reference to medical treatment, J. Michigan St. M. S., 21:166-170, April, 1922.*

With reference to the treatment of diarrhea, "After several days, 2% to 3% of a maltose-dextrin preparation may be added (Dextri-Maltose). This is preferable to the easily fermentable lactose or cane sugar."—*F. Lust: The Treatment of Children's Diseases, J. B. Lippincott Co., Phila., 1930, p. 145.*

In dyspepsia, "The carbohydrate must not be allowed to exceed 3 per cent. Dextri-maltose is the most suitable sugar."

In the treatment of decomposition (atrophy, malnutrition, marasmus), ". . . when there has been obvious improvement, dextri-maltose is gradually increased from 3 to 5 per cent."—*B. Myers: The nutritional disturbances of infancy, Brit. M. J., 1:1079-1083, June 21, 1924.*

"The treatment of artificially fed children in the first of these groups consists in putting them on a low fat dietary, and giving them carbohydrate in the form of one of the less fermentable sugars—e.g., dextrimaltose."—*L. G. Parsons: Wasting disorders of early infancy, Lancet, 1:687-694, April 5, 1924.*

In the milder cases of inanition, "Regulation of this disturbed organismal balance is obtained by the addition of carbohydrates, while fat and casein are reduced. For this purpose dextrimaltose and flour are better than the ordinary sugars, since they are more slowly absorbed and have greater efficacy in their powers of controlling the flora in the large intestine."—*W. J. Pearson and W. G. Wyllie: Recent Advances in Diseases of Children, P. Blakiston's Son & Co., Phila., 1930, p. 116.*

In intestinal intoxication, "I have had more experience with dried skimmed milk in which 2 to 5 per cent dextrimaltose, barley or rice flour has been cooked, and the mixture subsequently fermented by lactic acid bacilli or soured with lactic acid, than with any other food except protein milk."—*G. F. Powers: A comprehensive plan of treatment for the so-called intestinal intoxication of infants, Am. J. Dis. Child., 32:232-257, August, 1926.*

Regarding the treatment of the marantic infant, "After the intolerance to sugar has been overcome a carbohydrate, preferably Dextri-maltose, may be added."—*C. S. Raue: Diseases of Children, Boericke & Tafel, Phila., 1922, p. 427.*

In spasmophilia, "Dextri maltose is the best sugar to use in these cases, in the proportion of 6 to 8 per cent."—*J. H. Reading, Jr.: Spasmophilia, Hahneman. Monthly, pp. 403-411, July, 1922.*

In the treatment of atrophy, "If the baby continues to improve, the next step in the treatment is to add to the milk one of the less fermentable carbohydrates, such as dextrimaltose; . . ."—*H. Thursfield and D. Paterson: Diseases of Children, William Wood & Co., 1929, p. 105.*

"I also find dextrin-maltose an excellent addition to albumin-milk when the first object of that food has been achieved and a gain in weight is desired; in this way I have succeeded in feeding albumin-milk far beyond the period usually advised, with highly gratifying results."—*F. L. Wachenheim: Infant-Feeding; Its Principles and Practice, Lea & Febiger, Phila., 1915, p. 158.*

"Dextri-maltose has been substituted for lactose not infrequently, when the tolerance for the latter continues low."—*I. H. West: Low fat, high starch evaporated milk feeding for the marasmic baby, Arch. Pediat. 48:189-193, March, 1931.*

"Malt sugar is indicated when others fail to produce a sufficient gain, or when malassimilation of fat is evident."—*O. H. Wilson: The role of carbohydrates in infant feeding, Southern M. J. 11:177, March, 1918; abst. Arch. Pediat. 35:447, July, 1918.*

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VOL. XVIII. ARRIL, 1934 No. 4

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THE ALLERGY SYMPOSIUM

Introduction.

Orville Harry Brown, M. D.
Phoenix, Arizona.

In introducing this symposium on allergy I wish to caution those who may take this subject lightly, considering it somewhat as a figment of the allergist's imagination, that there is really something to it. When a child can die suddenly from a little bit of protein injected into its tissues, it behooves us at least to ask, what of this question called allergy. I was perfectly astounded at a recent meeting of perhaps fifty physicians, when the chairman asked for a show of hands of those who make sensitization tests for horse serum before giving antitoxins, that only four hands were raised. Three of those are at this meeting.

It is well to remark that it makes no difference to the tissues, in case they are sensitized to the substances introduced, whether they are proteins gaining admission to the blood streams by way of prophylactic inoculation against tetanus or whether they are proteins from food eaten and absorbed before being completely digested. The reactions appear to be identical. Both reactions may be dangerous or possibly only serious. It is probably more important, however, to recognize that the mild reactions are far more frequent than are the severe reactions and cause an endless amount of suffering; because of their mildness they are less spectacular and, hence, more difficult to recognize and much more difficult to diagnose completely.

The diagnosis is not simply a question of applying a few protein tests to an arm, nor is the treatment simply eliminating a few foods from the diet nor giving a few desensitizing injections. Diagnosis and treatment are both likely to be complicated; and the problems are met so often, by the general men and the various specialists, alone and as parts of other problems, that all medical men should be informed upon the subject.

There has accumulated a vast literature and collection of facts upon the subject. In the formal part of my remarks I shall endeavor to present to you what most of you haven't time to do for yourselves. By reading outstanding articles and attending such meetings as these, you should be able to get a working knowledge of allergy. My admonition is to listen carefully to the papers to follow. Because a report does not agree with your experience, or seems fantastic, do not dismiss it as not worth considering.

FOOD ALLERGY

(A Resume of the Literature; Personal Observations)

ORVILLE HARRY BROWN, M. D.
Phoenix, Arizona.

Having read, by reference, abstract, or in the original, five hundred or more articles upon, or applying to, food allergy, I attempt a critical review and resume of important facts and theories of these articles. Observations and thoughts of my own will be introduced here and there as are applicable.

The seriousness of the problem deserves the most careful consideration. Osler wrote, "There may be 'death in the pot' from many causes." Funck said, "The most deadly poison most frequently administered is the daily food." Then there is that trite old saying, "Man digs his grave with his teeth!" Than diet and food problems there is none more important.

SYNONYMS

Used more or less synonymously are allergy, phenomenon of Arthus, anaphylaxis, atopy, sensitization and hypersensitivity; the term idiosyncrasy has come down from the ages bearing in its arms the phenomena now classed as allergic.

DEFINITIONS

The phenomenon designated allergic, it now seems, is an exudation, often marked, of serum and eosinophiles, with a contraction of smooth muscle fibers, produced by proteins or partial proteins meeting their antibodies in a tissue. My own definition has been: A quick type of inflammation set up by proteins. Rackmann's is: A capacity to develop sensitization to foreign substances.

There are two theories, says the editor of the Journal of the American Medical Association, to explain allergy: The meeting of the proteins and their antibodies are directly responsible for the tissue disturbance; and the union of the antigens and antibodies in the tissue forms histamine or histamine-like substances—designated "allergic hormones"—which cause the inflammation.

My own view has been that the antibodies in the tissues are really immunity factors, of the nature of enzymes, which destroy antigens; the destruction of the proteins—antigens in sensitized tissues is rapid; histamine or histamine-like bodies are produced from the antigens; they produce inflammation with a pouring of serum and eosinophiles into the tissue.

HISTORY

Fothergill in 1794 said that foods bring on sick headaches. Jenner in 1798 observed that a second inoculation of cowpox produced an inflamed area. Bateman in 1817 recorded that there is an internal cause for eczema. Magendie in 1839 produced death of rabbits by second injections of egg albumin with doses which would have had no serious effects as first injections.

Jonathan Hutchinson in 1884 described vomiting, abdominal distress, and a sinking sensation, as due to ingestion of extremely small amounts of egg, and spoke of idiosyncrasy, diathesis, and inheritance.

Orton in 1886 found egg-sensitive cases in three generations of one family with gastro-intestinal symptoms and headache; Koch observed a skin necrosis at times after injections of killed tubercle bacilli. Gould and Pyle in 1900 recorded that idiosyncrasies had been found to various foods, such as honey, nutmeg, strawberries, vinegar, coffee, citron, meat, apple, almond, egg, parsley, fig, and chocolate.

After the introduction of antitoxin by Von Behring in 1894, its use caused reactions which soon became known as serum disease. A number of the early workers with serum disease and other forms and problems of allergy, by priority, were Dunbar, Simon Flexner, Richet, Hericourt, Theobald Smith, Arthus, Von Pirquet, Schick, Wolff-Eisner, Rosenau, Anderson, Otto, Besredka, Steinhardt, Vaughan, Wheeler, Doerr, Russ, Friedeberger, Wells, Osborne, Novy, de Kruif, Schloss, Walker, Cooke, Van der Veer and Manwaring. The names of the modern workers are legion. Many of them will be mentioned in connection with the various problems which will be discussed.

TYPES OF FOOD ALLERGY

Asthma, since Feltzer's first suggestion in 1909 that anaphylaxis might explain it, has become generally accepted as a result of food or other allergy, or a combination.

Urticaria has also been regarded, for two decades or more, as due usually to food reactions.

Eczema—at least certain types of eczema—followed soon after urticaria into the allergy stable.

Angioneurotic edema seems to be safely classified as a sensitization phenomenon.

Gastro-intestinal symptoms, such as coated tongue, foul breath, canker sores, nausea, vomiting, heart-burn, diarrhea, pain, colic, flatulence, even constipation, have been definitely proved as due, far more often than suspected, to sensitizations. Even the prominent writers on these subjects have been too numerous to attempt to mention.

Migraine, although not so generally recognized as such, is certainly in many instances an allergic phenomenon, if we are to give credence to such workers as Eyermann, Alexander, Vaughan, Balyeat, Rowe, Schnabel, Barbarin, Buchanan, Beecher, Maloney, R. C. Brown, Tillotson, Liveing, Alvarez, Gay, and others. My own experiences strongly support this.

Epilepsy is following migraine to the atopy stall, we must believe, when we read the re-

ports upon it by Waldbott, Ward and Patterson, Pagniez, Mouzon and Trupin, and Boston and Henry, to mention but a few who have given convincing reports. I have had excellent results treating epilepsy on this theory.

Rhinitis and the common cold, it has been suggested by various writers—probably first by Walker, often may be allergic. I am convinced this is true. Harkovy says frequently occurring winter coughs and colds may be properly grouped with asthma, urticaria, rheumatism and angioneurotic edema.

Many have thought that mucous colitis is allergic and the meritorious reports by Balyeat, Hurst, Lyon, Barth, Hollander, Vaughan, Rowe, Duke, and others, go to prove that at least certain cases are. I have no doubt that many cases are allergic.

Pylorospasm and other intestinal-tract spasms, especially the infantile, are placed by Chisen and Breithaup, Ward, Drueck, and others, as anaphylactic; intestinal spasm has been seen by Ecker and Bisking, Eyermann, and others, and proven to be due to food reactions.

That peptic ulcer is allergic in many cases is supported by an astonishing amount of convincing work by Kern and Stewart, Levine, Moes, Ivy, Shapiro, Beach, Bronstein, Serby, Toy, Ward, and others. I have had for years such a conception.

Dysmenorrhea and other menstrual disturbances may be sensitization processes, according to Cooke, Rowe, D. R. Smith, Duke, and Benedict.

It was first suggested by Osler that the Henoch-Schoenlein purpura hemorrhagica might be anaphylactic. Alexander and Eyermann, Newhauser, Minot, Motolece, Lee, Pratt, Duke, Drueck, Lawson, Goldstein, Grace, Benedict, Freemont, Smith, and Kohn, have presented much irrefutable argument supporting Osler. Pratt in a study of 100 cases of purpura, found that 30 per cent of them had associated urticaria, 15 per cent had erythema, and about 33 per cent had angioneurotic edema.

Psoriasis is not yet definitely in the allergy classification but it seems to be heading rapidly in that direction, judging from the reports of Schamberg, Kolmer, Ringer, and Raiziss, Janssion, Giard and Wartinaud, and Brook. My own experience is that psoriasis is an allergic phenomenon.

Meniere's disease, Duke, T. W. Clark, Malone, Yandell, and others, have found in certain cases to be due to reactions from food and other substances. Malone and Yandell's cases were proved to be from orris root. I have a man now with dizziness, somewhat of the Meniere's type, who was made much worse by a Karo-syrup diet for 24 hours and still worse by a milk diet for 24 hours. Diet manipulation is gradually improving him. Richet, Jr., and Cander, and others include dizziness as an allergic process.

Difficult feeding cases in childhood, La-Roche, Richet and Saint Girons, and Mitchell, say are often due to allergic tendencies of the infants.

Sinusitis may be caused by, or have its foundation laid by, allergy, according to Moore, Proetz, and others. My own observations make me support this.

Glomerular nephritis, in the opinion of Fishberg, may be from a protein sensitization.

Enuresis, Moore suggests, may be due to an allergic disturbance.

Certain cases of certain types of rheumatism are, in light of the reports of Oriel, Pemberton and Pierce, Custerman, Carr, Clark, Herry, Swift, Weintrand and Harkovy, undoubtedly due to allergy. I recall one case of acute joint pains miraculously relieved by eliminating orange from the patient's diet.

Cystitis and other urogenital allergy due to food has been reported by myself, Duke, Rowe, Sterling, Moore, Westphal, and others.

Eye disturbances—amblyopia, conjunctivitis, dimness of vision, scintillating scotomata, nystagmus, episcleritis, papillitis, strabismus, pain in eyes, intra-ocular hemorrhage, iritis, corneal ulcers and blindness—have been reported as allergic by Benedict, Balyeat, and Rinkel, myself, and others.

Pruritis, according to Vaughan, Rowe, and Andersen, may be due to food allergy. I have had positive proof of this.

Fever may result from allergy, according to Rowe and Haritanti. I have had one unmistakable case of fever from allergic reactions.

Facial neuralgia, according to Wilson and Kennedy, may be due to sensitization. I have had several cases which seemed to me most

likely allergic; treatment based on this theory was satisfactory in one case and definitely beneficial in two others.

I have one case of neuritis which it seems must be allergic.

Several workers have regarded acne as having allergic features at least in its etiology.

Undue fatigue may result from allergy, according to Vallery-Radot and Blaumantier and Rowe.

Kuskawski, Lintz, myself, and others, have suggested that hypertension may be due to allergy. Waldbott removed all allergens in several hypertension cases and the blood pressure fell. Restoring the reacting foods to the diets caused the return of the hypertension. Cohen, Fineberg, and Rudolph, on the other hand, eliminated all reacting foods from a series of hypertension cases with allergy and there was no improvement in blood pressures. The mere fact, however, that all apparent allergens were removed without benefit, does not disprove the theory of allergy as a cause of hypertension. Hypertension is such an enigma and so serious a malady that a theory as plausible as the allergy one should not be discarded until there is a better one to take its place. Hypertension is usually of long standing and long-standing allergies are notoriously difficult to respond to treatment.

Graham, Cole, Copper and Moore, Evermann, Gay, Rowe, and Drueck, have found allergic changes, in or about the gallbladder, giving a picture of cholecystitis.

Erythema multiforme is reported by Tzanck and Cord, and by Lyon and Bartle, as being due to allergy.

I have had one case of definite and fairly marked psychoneurosis which was cured by treating as an allergic case. Kennedy says angioneurotic edema occurs in the brain, giving hemiplegia, aphasia, paresthesia, vertigo, and psychoneurotic tendencies. Rowe and others refer to mental confusion in allergics. F. C. Smith speaks of speech confusion, memory defect, mental inertia, as associated with migraine. We are all familiar with the mental disturbance which is common with epilepsy.

I am inclined to disagree with Alexander in his statement that cardiac tissue is not affected by allergic reactions; I have had four cases of paroxysmal tachycardia that were successfully treated on the basis of this theory. Hochrein found diet manipulation helpful in treating tachycardia.

Mills says that a high protein diet after operations predisposes to the formation of thrombi and emboli. This observation may have extreme value.

Moore suggests that chorea and spasmophilia may be allergic.

ETIOLOGY

The direct cause of food allergy, of course, is food—probably entirely the proteins or their split products.

As to the indirect or predisposing causes, the literature contains relatively little that can be said to be proven. There are many theoretical suggestions, a considerable number of which have the weight of common sense. There is a fair amount of experimental facts which will be presented in the paragraphs on experimental work.

The predisposing factors which are mentioned in the literature have to do largely with the gastro-intestinal tract.

Liver inadequacy, probably in the destruction of protein and protein products which have been absorbed before complete digestion of them, seems to hold first place as a predisposing cause. This has been mentioned by Dennis and Moore, Rowe, Manwaring, Reeves, May, Shumaker and Wright, Barber and Oriel, Cramer, Diamond, Osman, T. R. Brown, and McClure and Heitsinger. There are experimental data to support these statements, which will be presented in the paragraphs on experimental work.

The use of too liberal quantities of food, especially of one or of a few foods, has been emphasized by various clinicians among whom are McCauley, Wallhauser, Rinkel and Balyeat, Rowe, Huber, and myself. Huber's case was interesting in that a mother conveyed to her infant, who had never nursed, a sensitization to peanuts by eating liberally of peanuts during the gestation period.

Digestive disturbances are considered as important by Dennis and Moore, McCauley, Hill, Oriel, myself, and others.

Abnormally active absorption power or increased permeability of the gastro-intestinal mucosa has been blamed by Schloss and War-

then, Sterling, Hill, Dennis and Moore, and Stokes and Pillsbury.

Inadequate secretion of hydrochloric acid has been regarded as highly important, and as more or less characteristic of allergic individuals, by myself, Stokes and Pillsbury, Criep, McElroy, Great Ormond Street Hospital of London, Duke, Brunner and Walzer, Rowe and Bray. Duke's case of perennial rhinitis seemed to hinge upon a lack of hydrochloric acid. Many workers have found that various allergics are benefited by supplying them with hydrochloric with their meals.

Beckman, Colby, Collier, Eggstein and the British Asthma Commission, regard the allergic state as an alkalosis and hence supply acids irrespective of their use as digestants. Colby regards the allergic state as parenteral indigestion, due to the lack of a proper catalyst and thinks hydrochloric acid introduced into the blood-stream acts as such.

The British Asthmatic Commission and Eggstein have found that there is first an acidosis which is superseded by an alkalosis in an allergic paroxysm. There are numerous clinicians, who have long regarded the allergic state as an acidosis. Not so long ago it was common practice to give for many of the various allergic conditions large amounts of alkalinizing drugs.

Gastro-intestinal infection is considered of importance, in predisposing to an absorption of protein and protein products, by Sterling, Anderson, Schears, Stokes and Pillsbury, Dennis and Moore.

In the minds of some of the observers, the gastro-intestinal tract may act as focus of infection and, like other foci of infection, produce an unexplainable something which upsets an equilibrium of the chemistry of the body. Mueller reports one patient, sensitive to five foods, who was cured of her atopic state by the extraction of her teeth. I have known of other definite cases of food allergy cured by removal of foci of infection.

Eating when nervous or irritable or fatigued, or when, for any reason, the state of mind inhibits digestion, has been mentioned repeatedly by Alvarez, by myself and others, as helping to cause allergy.

That foods not properly prepared for easy digestion, and the use of bran and roughage in general, may slow up digestion so as to permit of too great an absorption of them before being properly digested and ready for absorption, has been emphasized by Alvarez and by me.

Too much fat with a production of fatty acids, according to Hill, renders the alimentary mucosa unduly permeable and thus leads to sensitizations because of the necessity of the body's destroying the split proteins after they reach the tissues.

Illness of one sort or another may so reduce digestion powers, according to Alvarez, that protein material is absorbed in too great quantity before having reached the proper stage of digestion. Glen and I have advanced the conception that perhaps the food, or foods, one has been fed when ill, will likely be found among the reacters, if not the chief offenders. The gastro-intestinal mucosa in infants, Dennis and Moore think, is immature and highly permeable and hence allows undue amounts of incompletely digested protein material to enter the blood and lymph streams; this they think probably accounts for the great number of sensitizations in childhood.

Inadequate pancreas digestion is blamed by Sansum and Stokes and Pillsbury for the entrance of the incompletely digested proteins into the body. I have found the use of the pancreas substance of value in relieving various allergic symptoms.

Organic lesions of one part or another seem to predispose to sensitizations. Becker advises that skin allergies must not have irritants applied. Anderson speaks of organic lesions of the alimentary canal as predisposing. Rustin had a case in which pruritis of a hand followed a burn of that hand. White and Taub found that areas with fungous infections have a tendency to develop food sensitizations. I have called attention to the possibility that heavy metal ointments applied to the skin repeatedly may predispose to urticaria and eczema. I have a patient just now who has recently had a severe dermatitis from the application of a facial cream: although the lesions have almost completely disappeared, she is unable to wear her wrist watch because of the dermatitis which develops under it. She thinks it is the pressure which does the harm. The pressure may set up an injured condition

of that part of her skin which renders it highly susceptible to the metabolic products in her system not in sufficient quantities to cause trouble elsewhere. I have had the idea, however, that, in this case and other similar cases, it is not the metal to which the patient is sensitive, but that the absorbed metal and perhaps the pressure, may be sufficient to produce injury of the local cells and, hence, a predisposition to sensitization of that tissue to foods.

Bowel stasis—constipation—and intra-intestinal pressure may be responsible for an inhibition of digestion, and an undue absorption of incompletely digested protein, in the opinion of Manwaring, Beattie and McBride, Hettner and Kriz, Benson, Adam, Stokes and Pillsbury, and myself.

I have observed that autolyzed products, over-ripe foods, putrified foods, predigested foods, and so forth, led when eaten, to prompt and often violent allergic reactions. (This work is yet to be reported in detail.) It has seemed to me also that perfectly good food may undergo putrefaction in a jejunum which contains bacteria and that this may produce fairly prompt and perhaps intense allergic reactions. This, I have thought, might explain the value of using liquid petrolatum or other mild laxatives in small amounts regularly with meals, as suggested by Richet, Jr., and Conder. Benson has the thought that protein disintegration may be excessive or abnormal because of constipation, and cause sensitizations. Sulmann calls attention to the dangers of putrefying protein in the alimentary canal. He has isolated a "putrid colloid." Bastedo says headaches from decomposition products in the intestines are common and I would say that this is probably an observation with which many, many persons will agree.

A nutrition-metabolic imbalance is largely responsible for anaphylaxis in the opinion of Schamberg, Kolmer, Ringby, and Raizis, Mccauley, Collier, Spangler, Kraus, Miller and Colby. Just exactly what is meant by the imbalance is not explained. The probabilities are that most of the workers quoted already in this chapter should be included in believing that there is a nutrition-metabolism imbalance, although they have not specifically so stated. Many of them, if not most or all of them, would also accept Spangler and Manwaring's statement that there is an immunologic problem connected with the nutritional and the metabolic.

Lintz, Burn, Pottenger, Eppinger, Hess and many others, have implicated the vegetative nervous system as having a weakness or tendency which causes its host to become an allergic individual.

There are others who think that the endocrine system is in some way at fault. Gay thinks that hypothyroidism is common in predisposing to allergy. Many have observed, recently Mueller, Allen, and others, that women are prone to be unduly allergic during their menstrual periods. In a conversation a year or so before his death, on the question of attempting to bring order from the chaotic metabolism of allergy, Engelbach said he believed it to be quite within the realm of possibility that various endocrine disturbances might be responsible for the mal-metabolism which leads to allergy, and that proper treatment of allergies with substitution endocrine therapy might be found advantageous.

The part that heredity probably plays has been mentioned by such a mob of workers in the allergic field that it takes a brave man even to admit that heredity is not all-important. There seems, however, to be a growing thought that individuals born non-allergic and with no allergic tendency, may become allergic with the proper combination of circumstances. Rantner and others have concluded that an hereditary tendency may be absent and yet the person may develop atopy. This has been my own opinion.

If the allergy state is nearly always an inherited state in the human race, is it not also the same in animals, and why are there not more failures in rendering experimental animals anaphylactic? Discussion of heredity will be found in the next section.

Mueller observed that sensitization to more than one food, often, if not usually, was necessary before an allergic state became manifest. He had a patient sensitive to wheat and to potato; the removal of either would relieve her allergic state.

My own view is that the predisposing causes may, and likely do, have five important divisions: heredity, diet, digestion, metabolism

and immunity. The first three of these points will be discussed later under the appropriate headings. I have regarded metabolism as being deranged possibly somewhat like that in diabetes. Mayhap an enzyme, a vitamin, or an endocrine hormone may be the missing substance. It may be rare for two cases to have the same thing missing. So many cases of food or pollen allergy have been benefited, even cured, by removal of foci of infection or by use of vaccines, that the suggestion has been forced upon me that the problem of allergy is partially immunologic. Manwaring in this connection comments that there is an immunologic relationship between cellular enzymes, antibodies, and antigens.

HEREDITY

Dennis and Moore found that over 50 per cent of their allergics gave positive family histories. Spangler studied the histories of 100 epileptics; among the parents and grandparents, there were eleven epileptics, thirty-five asthmatics, seven with hay-fever, fourteen with urticaria, six with eczema, and sixty-six with migraine. Buchanan had forty-six families with the migraine-epilepsy syndrome; sixty-four of 262 children had epilepsy or migraine, a Mendelian ratio of 3.09 to one. Cooke and van der Veer conclude that hypersensitiveness is transmitted as a dominant characteristic according to the Mendelian law in about 50 per cent of the cases; Weringer says it is so frequently familial that its being an hereditary cellular affair seems likely. Rowe remarks that the sensitized person may have offspring not sensitive, but that there is a tendency to transmit sensitization.

Piness and Miller investigated family histories of a series of cases and concluded that 41 per cent gave positive family histories. Adamson and Sellers think that the evidence is that epilepsy has an hereditary base to a slightly less extent than asthma. Aldred-Brown and Munro studied fifty cases of rheumatism and four per cent had allergic histories.

Longcope thinks the allergic inheritance is of a quality of tissue rather than of a specific hypersensitiveness. Allen regards migraine and asthma as hereditary maladies. Waldbott found hypertension in allergic families. Hill regards heredity as relatively unimportant in childhood eczema. Harkovy writes that all persons probably have the ability to acquire sensitiveness in one form or another.

Ratner and Greenburgh say that identical sensitizations exist in mother and child, transferred through the placenta; the antibodies so passed have the qualities of Prausnitz-Kuestner antibodies. Congenital allergy may be either active or passive and is the same as sensitizations acquired through inhalation, ingestion, or injection; hence, it follows that allergy is not always dependent upon chromosome inheritance.

My own impressions are that, while an hereditary tendency toward allergy must certainly predispose toward the development of sensitizations, a person may have no hereditary predisposition and yet develop sensitizations.

(Continued in May Southwestern Medicine)

SOME PRACTICAL ASPECTS OF BRAIN TUMOR DIAGNOSIS

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There are two types of brain tumor symptoms: 1. General symptoms; 2. Focal symptoms. The general symptoms, which may be present in any brain tumor, are due to increased pressure within the inelastic brain case, regardless of the position of the tumor. These include the classic symptoms of headache and vomiting. The other group, the focal symptoms, are due entirely to the location of the tumor under consideration; that is, the exact part of the brain which is being irritated or destroyed. A focal symptom has nothing to do with the pathology; it might be equally well due to syphilis or to a cerebral hemorrhage if it occurred in the same situation as the tumor. Because the general symptoms, the symptoms of increasing intracranial pressure, indicate that something is growing within the cranium, they are of special diagnostic significance. The focal symptoms, however, can not be ignored, for, if we watch them carefully, they may show a steady

spread, or growth in intensity, which may also indicate, in itself, that a single lesion is steadily growing within the brain. Such a growth of symptoms may be observed at times, before even a headache occurs. Furthermore, it is the focal symptoms, the paralyses and losses of sensation, which can tell us clinically exactly where a tumor is situated.

A tumor may announce itself for the first time with either the focal or general symptoms. The general symptoms may mislead us into thinking of another part of the body, the gastro-intestinal tract or the kidneys, for example. The focal symptoms may make us think of some other nervous disease, if they are not accompanied by general signs. The ideal diagnostic situation comes about when they come together, but we cannot always have this good fortune in making an early diagnosis.

GENERAL SYMPTOMS

The following are the cardinal symptoms and signs due to sheer pressure within the skull: 1. Headache. 2. Vomiting. 3. Choked disk. 4. Convulsions. 5. Dizziness. 6. Mental dullness. Disturbances of pulse and respiration. We shall consider these in some detail.

Headache: This is an extremely common symptom in brain tumor, perhaps the most common, and certainly the best known. Unfortunately, it is also one of the most common everyday symptoms of normal people, and of people afflicted with an infinite variety of diseases; sinusitis, nephritis, constipation, among scores of others. What sort of headache should make us think of a brain tumor? The typical brain tumor headache is persistent, and it resists ordinary medications. It usually grows in severity and in constancy as time goes on. Sometimes it grows suddenly worse or is relieved by a change in the position of the head. Straining or coughing or sneezing increase its severity. An excessive intake of fluid may relieve it. The position of the headache is rarely indicative of the location of the tumor. When a tumor is near the surface, however, the headache may be directly over it, and there may be local percussion tenderness. When a tumor is in the most posterior portion of the cranial cavity, there may be occipital headache, even stiffness of the neck.

Vomiting: This is another everyday symptom, which, of course, makes us think first of a stomach disorder. When the vomiting is of cerebral origin, it is liable to be sudden, projectile, unrelated to meals. Sometimes there is a total absence of nausea. With it, other signs of pressure frequently occur, such as headache or dizziness, and these symptoms may mount in severity as vomiting occurs. The vomiting may also respond to changes which influence intracranial pressure, just as the headache does.

Papilledema or Choked Disk: This sign is the most valuable of all. It consists of a swelling of the optic nerve head, that can be seen directly on examination with the ophthalmoscope. The nerve head becomes blurred, its outlines indistinct, or lost. The veins are swollen and tortuous, and there may be hemorrhages in the retina. The degree of swelling may be measured by bringing the disk into focus with graded lenses. Visual disturbances may be absent for a surprising length of time in choked disk. It is therefore imperative that the physician look for it and see it himself when he suspects its presence. Furthermore, he must examine both eyes, for it may be present in only one. Occasionally sudden loss of vision occurs in its development. Eventually vision always becomes impaired and finally irrevocably lost when secondary atrophy occurs. A very high percentage, although not all, of brain tumors have choked disks. Many diseases have been observed in which choked disk may occur, among them malignant hypertension and encephalitis. But ninety per cent of choked disks are due to brain tumors, and its presence alone is sufficient for a presumptive diagnosis. Of course, we must differentiate it carefully from other eyeground changes, such as the neuroretinitis of kidney disease, and we must give due recognition to other possible causes such as a terrific hypertension, or obvious acute inflammatory disease of the brain, especially in an epidemic. I am not informed regarding the incidence of true choked disks in the present St. Louis epidemic. However, choked disk is usually a rare finding in encephalitis. We should remember that even a hysteric may vomit, but swelling of the optic disk points to severe organic brain disease. most probably brain tumor.

Convulsions: Generalized convulsions are

frequent in brain tumor, when the pressure becomes intense. Occasionally, in temporal or frontal lobe tumors, they are the earliest symptoms. The importance of brain tumor as a cause of so-called epilepsy must be remembered, and all epileptics scrutinized carefully with this possibility in mind.

Mental Changes: Regardless of the position of a brain tumor, the majority (perhaps) show a certain degree of mental dullness, due to pressure. This may progress to sheer stupor, or even coma, as the pressure increases.

Dizziness: This, again, is a common symptom in many diseases. In brain tumor, it may closely parallel the headache and vomiting. This may or may not be true vertiga, with actual falling.

Disturbances of pulse and respiration: As intracranial pressure increases, and the medulla is compromised, there is a tendency to slowing or irregularity of the pulse and respiration. In the terminal phase, both of these mechanisms may escape and become extremely rapid. None of these changes, however, are liable to be present in the early stages of brain tumor.

FOCAL SYMPTOMS

To serve as an outline, we have grouped some of the important focal signs and symptoms on a chart. (Chart I.) We intend merely to indicate their tremendous range, and we shall make no attempt to discuss them in detail. Any single cerebral neurologic sign may be the sign of a brain tumor, for a tumor may occur anywhere in the brain. A careful history, an exhaustive neurologic examination, and an exact knowledge of neuroanatomy are, of course, necessary for good cerebral localization.

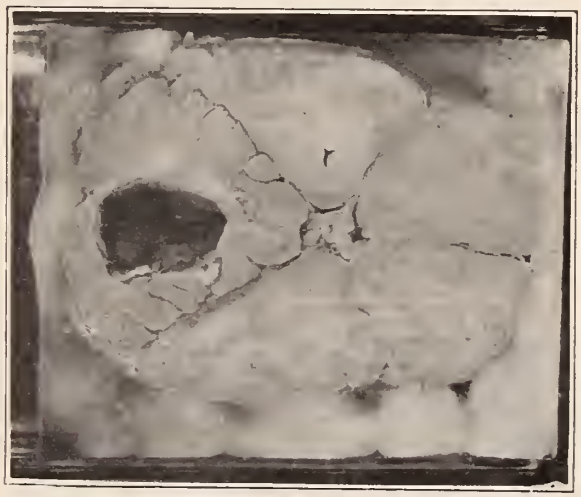
CHART 1
FOCAL SIGNS AND SYMPTOMS OF BRAIN TUMOR

I. Motor Disturbances.
   A. Reflex disturbances. B. Pareses and Paralyses. C. Incoordination and other cerebellar phenomena. D. Distubances of posture and tonus. Abnormal movements. (Extrapyramidal.)
II. Motor discharges or Jacksonian fits. (Localized clonic convulsions.)
III. Disturbances of Sensation.
   A. Superficial or deep. B. On face, mucous membranes, or body.
IV. Disturbances of special senses.
   A. Vision. (Choked disk. Optic atrophy. Field defects.) B. Hearing. C. Smell.
V. Mental and Emotional Disturbances. (Including aphasia, apraxia, acalculia and other related phenomena.)
VI. Remote Physiologic Disturbances.
   A. Disturbances of growth and nutrition. (Acromegaly. Frohlich's Syndrome, etc.)
   B. Metabolic distu.bances (Glycosuria, fever, etc.).

CASES

We may now proceed to a few illustrative cases from the collection of the Menninger Clinic, from which we can gain more than from further tabulation. These are post-mortem specimens, and from that very fact they represent mistakes (in a way), but that only makes them all the more instructive.

Case 1. The patient was a housewife of twenty-three who gave a history of only a few months of vomiting, severe attacks of headache, and a staggering gait. For four weeks, she had kept nothing on her stomach and had had a constant headache. She was treated with various liver and stomach medicines, even osteopathy. Finally her illness was considered psychological and was attributed to troubles at home—marital difficulties with a callous husband. She grew worse rapidly. Very shortly after the discovery of choked disks and ataxia of the legs was made, she had a sudden death. At autopsy a large midline cerebellar cyst was found, filled with hemorrhagic contents. (Fig. 1.)



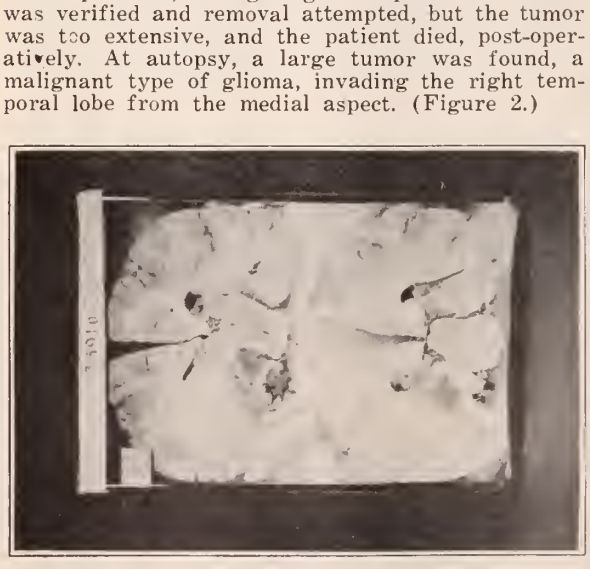
This case illustrates the type of onset in which violent signs of general pressure predominate. Such an onset may even be abrupt. This is liable to be the case when the tumor is in the posterior fossa of the skull, as in this young woman. The same type of onset may occur when the tumor is actually inside the ventricles of the brain. The reason for the abruptness of onset and the high pressure is the fact that the circulation of cerebrospinal fluid can be blocked very sharply by either type of tumor. In this case, there was also a

focal neurologic symptom, the staggering gait. This, combined with the symptoms of increasing intracranial pressure, could have indicated not only the presence of a tumor, but also some hint of its location, even before exact examination was made.

Case II. The next case is that of a college professor of fifty-two. About a year before his death, he began to suffer sudden spells, in which he would be seized by a dread of death and "goose pimples" would break out all over his body. Occasionally, preceding these fits, he would have hallucinations of taste or smell. A sudden strong odor would come into his nostrils or a foul taste into his mouth for no reason. Occasionally he would pass into a dreamy state, and his wife and child would seem unfamiliar, while strangers would be mistaken for old acquaintances. He had only a very slight headache, not always present. This man was a severe hypochondriac; he felt his pulse and worried about himself all the time. The neurological examination was essentially negative. He was, therefore, considered a neurotic. For a time he seemed to improve, but then suffered a mild acute respiratory infection lasting only a day or two.

Immediately following this he developed, among other signs: 1. A choked disk. 2. A very slight weakness of the left side of his body with dulling of sensation on that side. 3. Visual hallucinations, —faces of people mocking him as they moved by. 4. A peculiar speech disturbance in which he was unable to name simple objects correctly, although he was quite glib in his attempts. 5. A defect of the visual field, in which he could not see in the upper left quarter of the field of each eye. This could be tested by the examiner's finger or by having him try to pick out objects in different positions with reference to his line of vision. 6. Lastly, a peculiar mental state, in which he joked and punned all the time about sad subjects, such as death and disease. This man showed certain paradoxical features which we need not discuss.

At operation, a large right temporal lobe tumor was verified and removal attempted, but the tumor was too extensive, and the patient died, post-operatively. At autopsy, a large tumor was found, a malignant type of glioma, invading the right temporal lobe from the medial aspect. (Figure 2.)

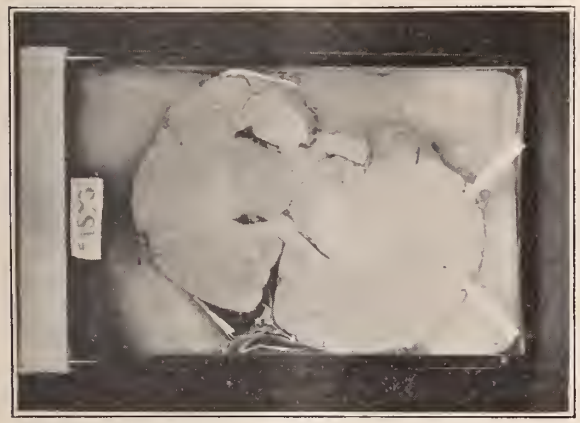


This case presents a host of illustrative points. First of all, it represents a type of onset, in which the signs of intracranial pressure came late in the course, at a time when the tumor was too large for successful removal. The onset in this case was with a classical if somewhat rare focal symptom, referable to the temporal lobe, that is, the combination of dreamy states, motor or sensory fits, and hallucinations of taste and smell. One can see how readily such a symptom could mislead one into thinking of a neurosis or even a psychosis. This particular patient had a highly neurotic background covering many years. In such a case, an early exact examination of the visual fields with a perimeter, might have saved considerable trouble, for many tumors give characteristic defects of the fields. The temporal lobe tumor, for instance, shows the quarter defect, which was present in this case. This man also had visual hallucinations, which are not uncommon occurrences in temporal and occipital lobe tumors. They are distinguished by their usual occurrence on one side, the side opposite to the tumor. The speech defect which this man showed was a sensory aphasia. This occurs in temporal lobe lesions and is characterized by an inability of varying degree to understand words, or to use them correctly. In motor aphasia, which is characteristic of frontal lobe lesions, the patient has difficulty in uttering words, even though his comprehension is intact. In either case, the lesion should be on the left side in a right handed man.

The tendency to silly joking which this man showed is really a more common symptom in frontal lobe tumor. It is frequently called by the German name, Witzelsucht. In frontal lobe tumors, a gross mental deterioration and change of personality may be the striking symptoms. Personal dignity may be lost very rapidly, and early incontinence is common. The patient frequently is entirely unconcerned about his symptoms or about the significance of his illness in general.

Frontal and temporal lobe tumors represent the types of tumors in which the early focal symptoms may be highly misleading. Temporal lobe tumors may go on for years with convulsions or other types of fits as the sole symptoms—simulating epilepsy or hysterical seizures. Frontal lobe tumors may present only mental symptoms for a long time. These may simulate general paresis and other organic psychoses, even psychoses of the non-organic type.

Case III. The next case is that of a forty-four-year-old female who had had a radical breast amputation for carcinoma two years before her death. Her final illness had an onset with sudden unconsciousness preceded by a headache and a single exclamation. Following this, she made a pseudo-recovery for ten days, then passed into a stupor and went rapidly downhill to death. During the period of stupor, she was incontinent. Her right arm jerked occasionally. Her left optic disk was suggestive of early choking, but it was not definite. At autopsy there was found a large left temporo-parietal nodule, a metastatic carcinoma. (Fig. 3.)



In addition to the difficulty of making the diagnosis of brain tumor, we must sometimes satisfy ourselves that the tumor is primary before subjecting the patient to a craniotomy. Whenever a patient has a known malignant tumor or has had one within the past few years, the possibility of metastasis arises. Even where there is no history of this kind, the tumor may rarely be a metastasis. A patient in middle or senile life who shows emaciation, with the signs of brain tumor, should always be suspected, and a careful search made for cancerous glands. An x-ray of the chest is also a useful measure to determine the presence of another metastatic tumor or a primary focus. We should mention here that carcinoma of the bronchus has a special tendency to metastasize to the brain. Indeed, the symptoms of brain tumor have often been observed to appear before the patient feels anything wrong in his chest. The symptoms of a metastatic brain tumor may be gradual in development. However, the type of acute onset present in this case is fairly common. There may also be, as was seen here, a latent period of apparent improvement. This is what frequently happens in brain abscess, between the acute onset and the development of the mature abscess, which gives signs simulating those of brain tumor.

This case also illustrates an apoplectiform type of onset in brain tumor, one of the relatively rare and deceptive modes of onset. The jerking of the opposite extremity was of Jacksonian type, although such seizures are more common in tumors that directly irritate the motor cortex. The presence of only a questionable choked disk indicates that we cannot place complete dependence on any single sign of brain tumor.

SPECIAL METHODS

We may now mention some aids to diagnosis, which may prove necessary in certain cases. Occasionally we may be forced to do a lumbar puncture, for instance, where there is no choked disk, and we are forced to differentiate a frontal lobe tumor from general paresis. When a tumor is placed far forward in the brain and there is no intracranial pressure, a lumbar puncture may not be particularly dangerous. When a tumor is in the posterior portion of the skull, when there are definite signs of pressure, the procedure is highly dangerous, and may be rapidly fatal because of the decompression, with sinking of the medulla into the foramen magnum. The x-ray of the skull is often of value in demonstrating changes due to general pressure or focal bony changes. Changes in the sella turcica are very important in pituitary tumors. The use of the perimeter or screen for determination of the visual fields is extremely valuable and not difficult technically. In cases of temporal lobe or pituitary tumor, the visual fields may be the chief means of making an exact diagnosis.

Sometimes it is impossible to differentiate between tumor and some other form of intracranial pathology by ordinary methods. In other cases, we may be unable to determine the precise location of a tumor for operation. For either of these reasons, we must turn to the special methods of lumbar encephalography or ventriculography. Both of these methods depend on the removal of spinal fluid and replacement by air so that we may visualize the ventricles of the brain by x-ray. Lumbar puncture is used in encephalography, and direct trephine of the skull and puncture of the ventricles in ventriculography. When the intracranial pressure is high, the latter method, the direct method, is less hazardous and should be given the preference.

CONCLUSION

Usually the diagnosis of a brain tumor depends on the observation of a progressive focal cerebral disease, which also manifests definite evidence of intracranial pressure. Of these evidences, the presence of choked disk is most conclusive. However, we can often suspect a tumor, sometimes make a positive diagnosis, before these general signs appear, if we remember that a focal neurologic sign that grows steadily in extent and severity is highly suggestive of an expanding lesion. Such a sign will usually progress in a fairly reasonable anatomic fashion. It will not skip from part of the body to part of the body, representing widely separated parts of the brain. A slight weakness of one side of the face may spread to the arm on the same side. Attacks of jerking of one arm may give way to weakness of that arm. An occasional transitory trouble with speech may grow to a hopelessly confused jargon. We must observe such developments closely, whether they occur in the history or under direct observation. It is not common that the fullblown signs of pressure which we have described are present at one time. Sometimes they are absent entirely until a tumor is huge and inoperable. Often a primary optic atrophy will be present instead of a choked disk, in frontal or pituitary tumor. Occasionally a well managed brain tumor will go to operation without any change in the eye grounds. When we are in a quandary about diagnosis or localization, we must turn to the special technical methods of diagnosis. However, these methods can only assist and never replace searching general physical and neurological examination, and minute scrutiny of the history of the symptoms, in the precise order of their development.

We must remember that brain tumors are not rare among fatal diseases. An eminent general pathologist has attributed one per cent of deaths to these lesions. By a constant alertness to the frequency of brain tumors, the great variety and occasional subtlety of their symptomatology, we can more often make diagnoses at a time when the surgeon still has a chance to cope with them successfully.

CHILDHOOD TUBERCULOSIS: DISCUSSED WITH SPECIAL REFERENCE TO PREVENTIVE MEASURES

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(Read before the Nineteenth Annual Session of the Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1935).

When we consider that 80,562 new cases of tuberculosis were admitted in 1931 to 509 special tuberculosis hospitals[1] in the United States, we can get some idea of the problem that still confronts us.

Childhood tuberculosis is the term applied to tuberculous disease resulting from the first infection in the lung with tubercle bacilli, regardless of the age of the patient.

Tuberculosis in infancy is usually a very acute disease and runs a rapid course. The organisms usually enter the blood stream and are carried to the meninges, where they find lodging, and we have miliary tuberculosis and tuberculous meningitis as the closing picture. It is not uncommon to see a baby die from tuberculous meningitis while it is still fat and healthy in appearance.

The method of infection is most often by inhalation, with the primary lesion in the lung. Still[2] reports 216 autopsies in children under twelve years of age, at the Hospital for Sick Children, Great Ormond Street, in which he decided that the primary lesion was located in the lung in 138 cases, or 63.8 per cent; in the intestine in sixty-three cases, or 29.1 per cent; and in the ear in fifteen cases, or 8.1 per cent. In autopsies on infants under one year of age, he found thirty-nine in which the primary lesion was in the respiratory tract; five in the gastro-intestinal tract; and seven in the ear. He also quotes 120 autopsies at Chelsea Hospital in which the respiratory route was the seat of primary infection in 65.8 per cent; and the intestinal tract in 16.7 per cent.

Von Pirquet[3] estimates that 95 per cent of all tuberculous infection enters by inhalation. Von Behring[4], Calmette[5], and Osler[6] give the intestinal tract first place. Hamburger[7], Koch[8], and Kinkelstein[9] say infection is usually

through the lungs. But I am more in sympathy with the attitude of Morse[10], who says he doesn't care whether the child swallows it or inhales it, that after he has it, he has it, and the question is, "what are you going to do about it?" And our question is, "what are we going to do to keep someone else from getting it?"

Preventative measures may be divided into two great divisions: first, raising the immunity of the individual child; and, second, preventing the spread of the organisms. Volumes could be written on either of these subjects.

Immunity and allergy are closely related, but we have no means of measuring immunity as we have with allergy. However, chronic tuberculosis never develops in the absence of previous infection. Therefore, such infection must confer some immunity. Much has been written about acquiring immunity. Calmette and many others believe that B.C.G. (Bacillus Calmette-Guerin) is of great value in the prevention of tuberculous infection. In infants this method has not been universally adopted. It is being tried out now in many parts of the world, but has not yet been sufficiently proved to be taken up by men in private practice.

While we cannot measure immunity, we do know that a child whose food, vitamin and mineral requirements are properly met is in better shape to withstand infection, and has more of that something we describe as resistance, than one who has not had the advantage of such a regime. Vitamins are now in the height of fashion, and while, as George Vincent once said of the endocrines, we teach more about them than we know, we do know considerable about the vitamins.

A recent article by Kugelmas[11] on nutrition for superior growth, gives much information on this question. We know that vitamin D, for instance, increases blood and serum calcium. This was shown conclusively by Kaminsky and Davidson[12,13], also by Crimm[14] and many others. Since all tuberculous individuals show reduced blood and serum calcium, it behooves us to keep calcium high. Wanshenk[15] found that there were no cases of tuberculosis in factories where calcium is prepared, and he also found that tuberculous individuals who went to work in those factories got well. Lime, then, must be good as both a preventive and a curative measure.

Vitamin A has to do with growth, tissue development, lactation, reproduction, and is an important factor in the maintenance of the integrity of epithelial tissues. Lack of this important vitamin shows up by failure of proper growth, weakened and diseased mucosa. As it is most noticeable in the eye, we think of xerophthalmia, but the mucosa of any organ of the body may develop infection from vitamin A deficiency. With healthy mucosa we may ingest all kinds of organisms without injury, but through breaks in the mucosa the organisms find a foothold, a port of entry. I have known children who were fed codliver oil and properly supervised from birth, to go through infancy without a single sick spell.

There is no question in my mind but that, if a child's diet and care is properly supervised—if protein, fat, carbohydrates, water, mineral and vitamin needs are all properly met; if sun baths are given in correct amount, if the clothing is neither too much nor too scant, and a proper amount of rest and hygienic conditions are secured—the likelihood of acquiring tuberculosis, or any other infection for that matter, will be greatly reduced.

A great responsibility and also a great opportunity rest on the shoulders of us who care for children. We can do much to aid in the warfare against this unseen enemy. In recent years the agitation over milk has borne much fruit. Our dairy herds are tuberculin tested, and a large percentage of milk now sold is pasteurized. No one now advises giving raw milk to infants. The question of acquiring tuberculosis from tuberculous milk is almost solved.

Tuberculosis being largely a family disease, given a case of adult-type tuberculosis in a household, with no precautions taken, the infection will spread to from 60 to 100 per cent of those in the household; and in due time other cases of clinical tuberculosis will develop in the family. Prevention consists in searching out these undetected cases of adult-type tuberculosis and teaching them how to prevent the spread of tubercle bacilli to others. It is more important that these patients who will not cooperate be isolated than it is that we isolate the diphtheritic; for we have a specific means of conferring active immunity to diphtheria, while for tuberculosis we have not.

The immediate prognosis is usually good, but children with childhood-type tuberculo-

sis contribute in a large way to those later developing the adult or fatal type of this disease.

Boys and girls in the teens who have not previously been infected with tubercle bacilli, are just as susceptible to infection and disease as the infant under the same conditions, and if the exposure is allowed to continue they often develop, in addition to the childhood-type, the adult and fatal type of the disease.

When we find an infant infected, it is our duty to investigate among the close associates for the source of infection. On the other hand, when we find an open case of tuberculosis we should watch carefully every infant and young child who has been in close contact with the patient.

The tuberculosis of a community is reflected in its children. The incidence of infection among the school-children of a community is the best method of approaching the problem of tuberculosis. Among the positive reactors will be found children with tuberculous disease and among their adult associates will be found open cases of tuberculosis previously unrecognized.

The incidence of tuberculous infection in infancy depends on the opportunities for exposure. It varies from 1 or 2 per cent, among infants with no known exposure, to 100 per cent among infants with definite and prolonged exposure.

By its very efficiency, the anti-tuberculosis movement has developed a somewhat paradoxical situation. The special tuberculosis sanatorium, the tuberculosis expert and all the various organized efforts to fight tuberculosis, have created a situation in which a case is found and sent to the special institution without any contact with the family physician, until he feels that tuberculosis is no longer one of his problems. He hears of some member of one of his regular families being diagnosed and sent to a special sanatorium without his ever having so much as seen the case, until he washes his hands of the whole matter and feels that tuberculosis is no longer his responsibility. It is true we need the specialist, we need special institutions, but they take care of only the acute stage of a very chronic disease. In the incipiency of the disease and after the patients are able to return to their homes, they must and should depend for help and guidance on the family doctor; and the organizations interested in this fight should, instead of going around the family physician, make of him their strongest ally.

Were it possible to locate every open case of tuberculosis in this country; were it possible to get every one of these patients to take the proper precautions to protect those whom they contact—those who are nearest and dearest to them,—the great white plague could soon be conquered. In these days of unemployment, when our government is spending billions to make employment, planting forests in Nebraska, making parks; to what better thought could our government turn than to the health and well-being of our people?

Why not have a health survey of our 120,000,000 people, making a complete physical check-up of every citizen? Why not follow up this health survey with the advice that could be given from the information that this survey produced and made available to both the individual and the family doctor? This could be done with a small fraction of what Europe owes us, and with a program of this magnitude carried out and followed to its logical and ultimate conclusion, we could develop, in this fair land of ours, a race of people the like of which the world has never yet seen.

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CHILDHOOD TUBERCULOSIS: ETIOLOGY AND DIAGNOSIS

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(Read before the Nineteenth Annual Session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

Our present-day concepts of the problem of tuberculosis in children have arisen as the result of an enthusiastic effort to study the disease and to observe its progress in what has, up to a little over a decade ago, been a neglected age period. As statistical studies made it evident that the period of adolescence was charged with a high mortality rate from the adult form of pthisis, it became more apparent that something goes on in the period of infancy and childhood which has a bearing on the high incidence of clinical tuberculosis during the teens. The methods of clinical investigation suitable for demonstrating the disease in the adult were of very little help in bringing to light the picture of what was taking place during the pre-adolescent age period in those children who later developed the chronic ulcerative type of tuberculosis with cavity formation. With the hope that, by the control of the disease during the period of infancy and childhood, we should be reaching the fountain-head of tuberculosis, careful studies were begun some 10 to 15 years ago which, because they have permitted the close study of thousands of cases from infancy and early childhood over a period of ten or more years, have made it possible to study the disease in its inception, through its various stages, and into the teen-age period and to see just what is taking place. The results of such studies have caused us to abandon orthodox views of many years' standing, and each year is adding more to our conception of prognosis, the significance of findings, and the rationale of therapeutic procedures. It is important to keep abreast of these changing viewpoints as they affect our concept of all phases of tuberculosis. It is my purpose merely to attempt to present the concept of tuberculosis in children which is recognized by the majority of workers in this field in such a way that it may afford a practical working basis for the understanding and care of the child with a tuberculous infection. An attempt will be made to demonstrate what we mean when we speak of "childhood tuberculosis," and in what ways it differs from so-called "adult tuberculosis." It is realized that there are many questions which are still unanswered and which further serial studies over longer periods will render more clear.

The report of the Committee on Childhood Tuberculosis of the American Sanatorium Association in 1929, consisted of the following: "Resolved, that the term 'childhood tuberculosis' be used to describe the diffuse or nodular lesions in the lungs and associated tracheobronchial nodes that result from a first infection of the pulmonary tissue with the tubercle bacillus." This is in contrast to the "adult type" which results from reinfection later on, which in the light of the most recent studies is probably usually exogenous, occasionally endogenous, and implanted on tissues made allergic or hypersensitive by the first or childhood-type infection. The following table illustrates the essential differences between the childhood type of tuberculosis and the adult type:

TYPES OF TUBERCULOSIS

Childhood Type

1. Common in children, rare in adults.
2. Results from first infection.
3. Associated tracheobronchial lymph nodes always involved, not always demonstrable.
4. Lesion involves any part of lung, no preferred sites.
5. Caseous lesions usually followed by calcification and slight fibrosis.
6. Infiltrated areas commonly resolve leaving little or no scar except for foci of caseation, which usually become calcified.
7. In general, a greater tendency to rapid spread of lesions and to development of miliary tuberculosis.

8. Cavities not apical, not close to pleura, form quickly and are more easily healed.

9. Prognosis is good.

Adult Type

1. Common in adults, rare in children.

2. Results from reinfection.

3. Tracheobronchial lymph nodes not involved.

4. Apical (or subapical) localization, often in lung opposite to that containing calcified primary focus and calcified tracheobronchial glands.

5. Caseous lesions usually followed by excavation and much fibrosis.

6. Infiltrated areas heal with much fibrosis.

7. In general, a greater tendency to encapsulation and to healing of lesions.

8. Cavities apical, close to and adherent to pleura, relatively rigid and do not heal easily.

9. When this type affects a child, the prognosis is bad.

(Waring, after Chadwick).

It has been pointed out by Krause that the first tissue response to invasion by the tubercle bacillus is a proliferative one, with formation of anatomical tubercle. This first pathological lesion may occur at any point in the lung, although it is more often seen in lower lobes. This primary, focal nodular lesion in the lung parenchyma usually becomes caseous, later much diminished in size, and over a varying period of time it becomes, finally, calcified and fibrotic. It is frequently not recognized until calficied, and then only by the x-ray. A roentgenogram taken shortly after the establishment of this lesion may show diffuse infiltration around this focus, or even consolidation, usually without striking physical signs. This stage in the process is often overlooked unless an x-ray just happens to be taken at that time. Almost co-incidentally, or very shortly after the appearance of this primary lesion, the regional tracheobronchial lymph glands become involved, with the setting up of caseous foci which, in most cases, follow a similar course to terminate in calcification and fibrosis. This pathological process, therefore, is going on in the tracheobronchial glands at exactly the same time and in exactly the same way as in the case of the lung focus, and the calcified tracheobronchial gland is the most commonly demonstrated lesion of childhood tuberculosis. These changes are usually retrogressive and benign, without cavity formation and with negative sputum. This benign course may, at any time, be interrupted by the escape of bacilli beyond the confines of the local lesion in the lung or glands, either by way of the blood stream or from rupture of a caseous focus into a bronchus, with dissemination of the infection throughout the lungs and the other organs of the body, producing the fatal miliary form of tuberculosis. When this occurs, it is usually associated with tuberculous meningitis and is the common terminal lesion of this age period. But evidence at present indicates that this is more often an accidental occurrence rather than one dependent upon the tissue defenses of the body.

The pathogenesis of the childhood-type lesions as I have described them, has been pretty well understood for over a decade, and we are indebted particularly to the investigative work of Opie, McPhedran, Krause, and Chadwick for the demonstration and description of what takes place in the lung at this time, particularly from the anatomical standpoint. In the past few years there has developed an especial interest in the role of allergy in this connection, and an attempt is being made to correlate certain previously unexplained phenomena with the factor of allergic sensitization of lung tissue following the primary infection. Krause said, several years ago, "As soon as any and every initial infection is established, we are obliged to reckon with two new bodily (tissue) attributes that conceivably affect pathogenesis. As soon as the first tubercle is formed, all the tissues acquire a new capacity to react to tubercle bacilli in an acute inflammatory manner. This property, denominated as allergy, embodies a condition of tissue hypersensitiveness to the protein constituents of the tubercle specifically over-resistant, that is, immune, to fresh implantations of tubercle bacilli, or to any further extension of those bacilli that may be already focalized."

There will be no attempt made on my part to theorize on the relationship of immunity and allergy in tuberculosis. Such evidence as we have is in many respects contradictory, and there is still wide lack of agreement among those who have made the subject a matter of especial study. But I should like to point out a very practical aspect of the question which concerns prognosis in this disease. Disregard-

ing for the moment the cases in which acute disseminated tuberculosis follows shortly after the initial infection (and these cases are relatively few in comparison to those in which it does not), the question may be put in this manner: Does the primary infection constitute an asset or a liability as far as its relation to the adult form in later life is concerned? There is abundance of proof that the allergic state set up in the tissues by this first infection is a distinct liability when these tissues are faced with reinfection at a later date. However, there is also good evidence that a relative degree of immunity also results from this first infection, and that in case of reinfection at a later date the lesions, rather than being of an acute, rapidly progressing type, are in most cases of a localized, chronic type, such as is characteristic of the adult form.

One attempt to answer this question has been made by Stewart and Myers of Minneapolis, who have had abundant material to make this study at the Lymanhurst School for Tuberculous Children. They have made observations in thousands of children, including serial x-ray pictures of the chest made at frequent intervals, and covering, in many cases, over ten years in the life of the child. These studies have afforded an opportunity to follow the sequence of events in a stated case from the proliferative and exudative stage of the early primary infection, through the stages of partial resolution, to the end results of calcification and fibrosis in the involved areas. Many cases they have followed in this manner to the onset of the adult form in the apical and sub-apical regions with extensive involvement. If time permits, at the close of this paper, I should like to show you some slides taken from their series, and very kindly lent to me by Dr. Myers. As a result of their observations they conclude that a primary tuberculous infection (which produces allergy to tuberculin) does not confer significant protection, but alters the tissue resistance in such a way that, when a reinfection is experienced, instead of being able to repeat the benign primary form, the body is doomed to develop the adult form of consumption. Apparently the human body can experience the benign primary form of the disease but once only. It has been shown elsewhere that nurses who began training without any previous contact with tuberculous patients, and who showed, as a result of the tuberculin test and x-ray, no evidence of ever having experienced a primary infection, when they were exposed to tuberculous patients on the ward, would always develop the first-infection type of the disease, regardless of their ages. However, in those who began training with evidence of having had their first infection sometime during childhood, when tuberculosis did supervene in a small percentage of these, after variable periods of contact, it was always of the adult type.

This is also important because the use of the BCG vaccine of Calmette, which has been popular in certain clinics on the Continent for several years, and which is being studied in this country by as competent an observer as William H. Park of New York at the present time, rests on a belief exactly the reverse. As you know, BCG vaccine is an attenuated culture of live tubercle bacilli, which, under properly controlled conditions, should not increase in virulence after being introduced into the body. Entirely disregarding for the moment the question of danger from virulence, it is an established fact that it is a means of artificially producing the first infection, with the production of allergy to tuberculin. In spite of the fact that its users advocate its use only in selected groups and under certain specified conditions, it is nevertheless true that there is one school, if we may call it that, represented by those who stress the undesirability and danger of the allergy set up by the primary infection and tend to minimize the importance of the protective immunity produced. Then, there is another school which feels that a carefully controlled first infection is an asset, and that the protection so conferred outweighs in importance the dangers of an allergy to tuberculin so established.

The diagnosis of the childhood type of tuberculosis rests upon (1) the history, (2) the tuberculin test, (3) the x-ray.

In seeking a history of contact with an open case of tuberculosis, it is important to question and evaluate any suspicious symptom, such as cough and generally poor health, not only in all members of the household, including present and past servants and other help, but other frequent associates of the child. This is frequently the most difficult and puzzling portion of the study of the case. The symptom-

atic history of the child itself is usually of very little help. The child with a first infection is often entirely free of symptoms of ill health. When complaints such as underweight, cough, frequent colds, and so forth, are present, they are often found to be due to some other disorder occurring co-incidentally with the primary tuberculous infection and bearing no specific relation to it.

As regards physical examination, we no longer feel that we can place much weight on procedures and signs that were previously thought of value. Even during the exudative stage, the physical signs in the lung are inconstant and inconclusive. At later stages they are entirely absent. Our increased knowledge of the anatomy of the child's chest and correlation with postmortem findings has made us lose faith in such signs as interscapular dulness, d'Espine's sign, and Eustace Smith's sign.

The tuberculin test is a test of the degree of allergy or hypersensitiveness to tuberculin. When positive, it indicates the presence of a focus of tuberculosis somewhere in the body. It does not often give definite information about the immunity of the child, as the curve of allergy does not necessarily conform to the curve of immunity. The Mantoux method of injecting a dilution of old tuberculin intracutaneously is the accepted method at the present time, and deserves to supplant the von Pirquet scratch method, because of its increased sensitiveness and its rough quantitative measurement of the degree of allergy. An initial dose of 1/10 of a milligram intracutaneously is usually used. If the reaction, which consists of a definite area of redness and edema at the site of inoculation, is negative at the end of 48 hours, it should be repeated with a dose of 1 milligram. If a high degree of allergy is suggested by the presence of such conditions as pleural effusion or erythema nodosum, or any other reason, it is safer to start with 1/100 milligram, to avoid the danger of a violent local reaction with sloughing. This is a very rare occurrence and should in no way act as a deterrent to the use of tuberculin diagnostically, which, according to most authorities, in properly regulated dosage is a safe procedure.

The x-ray picture is our most valuable method of locating the site of the primary infection and of observing the stage reached by the infective process. Whereas, the primary foci in the lungs and tracheobronchial lymph nodes are the ones most frequently demonstrated, it must not be forgotten that other organs, such as the tonsils and intestinal tract, may be the portal of entry, and that many times it is possible to demonstrate calcified lymph nodes in roentgenograms of the neck region and the abdomen. Where the tuberculin reaction is positive, x-ray pictures of the chest should be taken in the anteroposterior and lateral positions, and where it is suggested, in the oblique positions, also. Pictures taken in various positions are of more value than stereos in the case of children's chests, as they afford a better view of the hilar region, where evidence of calcification is sought. In the stereo anteroposterior views, this important region is partially covered by the heart shadow. When the primary focus is not disclosed by careful chest pictures, it should be a routine procedure to take flat plates of the cervical and abdominal regions, with a careful search for calcium deposits. In small children, it is often possible to include two of these areas on one plate.

"From the standpoint of the appearance of lesions discovered by x-ray examination, childhood pulmonary tuberculosis of first infection may be divided into the following three types: (a) resolving pneumonic-appearing parenchymal consolidations, which represent early stages of the disease, (b) intrathoracic lymph-node calcifications of various degrees, which represent late permanent stages of the disease, (c) Ghon tubercles associated with hilum-node calcifications, which represent late and permanent stages of the disease. These various types of lesions merely represent various developmental stages in the evolution of the pathology produced by a primary tuberculous infection, between which many transitional stages may be noticed. The end result is always the same, except in fatal cases, in that calcification of hilum nodes appears, or that Ghon tubercles develop, associated with calcification of the homolateral hilum nodes."

In closing, then, it may be said that we have, at the moment, enough definite knowledge about the etiology and pathogenesis of childhood tuberculosis to form a sound basis for diagnostic criteria. The continuation and completion of other studies, now under way, will

tend to clarify many points and fill in gaps that now interfere with a completely rounded-out picture of childhood tuberculosis.

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O. H. B.

CHILDHOOD TUBERCULOSIS AS A PUBLIC HEALTH PROBLEM

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(Read, by title, before the Nineteenth Annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

The health officer sees the problem of childhood tuberculosis somewhat differently from the pediatrician or the practitioner of internal medicine. To the latter come Mr. and Mrs. Jones and Billy Jones. The parents want to know what is the matter with Billy, in particular, it may be, whether he has an infection in his chest or no. They will be grateful for whatever diagnostic procedures the doctor thinks necessary, and they are able and willing to pay, not only for the x-ray pictures, but also for the skill used in reading them.

The health officer sees the Jones family multiplied some thousands of times and changed and diversified in the process. His Jones' ask for nothing; most of them have never heard of childhood tuberculosis, many of them will be willing as a favor to allow him to make a Mantoux test, but none of them will be ready to pay for x-rays. Before he undertakes to make a diagnosis, he must be satisfied that the taxpayers' money which he will spend is not being spent in vain.

There are three possible lines of justification for expenditure of public money in a search for childhood tuberculosis first, we may hope that by finding tuberculosis infection in the primary stage we may be able to prevent the development of the open infectious cases of tuberculosis, and so stamp out the disease by preventing contagion; second, we may justify the cost of discovering childhood tuberculosis as a method of epidemiology leading to the discovery of those open cases from which the child derived infection; and, third, we may regard our survey of childhood tuberculosis simply in the light of research.

The first line of justification is a very tempting one. It seems to be the logical outcome of the campaign for earlier and earlier diagnosis of tuberculosis. But before we can conclude that the discovery of pulmonary tuberculosis in children certainly justifies the cost, we must be able to prove two things: first, that the bulk of adult tuberculosis will arise from amongst those cases of primary tuberculosis that we shall discover and not from other cases of primary tuberculosis that will occur after we have made our investigation; and, second, that having discovered cases of primary infection, we have it in our power to prevent progress of infection to the secondary and tertiary stages.

It must be remembered that the recovery rate of children with tuberculosis, even when they are manifestly sick from tuberculosis, is fairly high. Studying 944 children under 15 years of age housed in the Soederby Hospital between 1910 and 1920, Lundquist[1] found that in 1930 and 1931, 75 per cent of the children had survived and 78 per cent of the survivors were without any sign of active disease. These children, I repeat, were manifestly ill. The child that we find, by the modern methods of diagnosis, to have childhood tuberculosis, does not appear to ordinary doctors, like you or me, to be sick at all. In the Bellevue-Yorkville demonstration, 1,000 children between 12 and 14 years of age were given medical examinations by physicians and graded in general health. The children were subsequently tested by tuberculin test and x-rays. Of the 184 children found to be tuberculous by the x-rays, only twenty-five were among the 168 children in the lowest health grade. In other words, 18 per cent of all children have clinical tuberculosis, and 15 per cent in the lowest grade of health have clinical tuberculosis. Not one of the 184 tuberculous children had been suspected of tuberculosis by the examining physician. The doctors had suspected twenty-four children of having tuberculosis, but the x-ray showed that in no single case were the suspicions justified. There were more tuberculous children among those who were over-weight than among those who were under-weight.[2] This experience is not unique; Burton Wood[3] writes, "In diagnosis we have to depend almost entirely on the x-ray picture of the chest; symptoms are not distinctive." Lord[4], writing out of the experience of the ten-year program in Massachusetts, says, "In the juvenile type

there are usually no symptoms which can be ascribed to the lesions." Lord adds that the disease may be progressive without constitutional disturbance, and this, of course, we must grant. But must we not also believe that in many cases the disease will not be progressive but regressive? If we trust to our prejudices, then those of us who believe that a first infection makes the individual more susceptible to subsequent infection will take the opposite view. To enter here upon a theoretical discussion of the immunology of tuberculosis would be a waste of time. The ultimate proof will be furnished by experience. There are now several communities in which the cases of childhood tuberculosis have been discovered and are being watched. Whether or not these cases will supply the bulk of the adult tuberculosis in the next ten years, will plainly be a matter of observation. Already in Massachusetts, Pope[5] considers that some evidence has been collected: "In a group of children followed from 2 to 6 years, significantly more pulmonary tuberculosis has developed among those with the childhood type of disease than with a suspect group." There is some further evidence which points in the same direction.

Grant for the sake of argument that future cases of open tuberculosis will develop from present cases of childhood tuberculosis, the public health officer still wants to know whether the clinician is able to prevent this development from taking place. Can this be achieved by removal from contact, avoidance of strain, the provision of adequate nourishment and adequate rest? Will it be possible in a given community to secure these advantages for known cases of childhood tuberculosis? Doubtless the possibilities of successful treatment will be increased if we can subdivide the cases of childhood tuberculosis into those which are benign and in which recovery may be expected without any special treatment, on the one hand, and those which tend to be progressive and call for a concentration of medical care. Such subdivisions have already been postulated by Wood[3] and by Opie.[6]

Let me emphasize again that, from the public health point of view, the economy of this program is of the first importance. In Massachusetts, it cost $140 to discover each case of childhood tuberculosis. How much the subsequent reinvestigations with x-rays and special care cost, I do not know; but it is plain that a significant number of adult cases must be prevented if this program is to be justified to the taxpayer.

My second possible justification of this program is for the discovery of open cases. On this I have only two comments to make at the present time. The first is that for this purpose the survey must be made of the entire community. It has been suggested by several writers that, as a measure of economy, childhood tuberculosis surveys be limited to children who are known to be in familial contact with open cases. Such a limitation would of course defeat the purpose which we are now discussing. My second comment is that a survey for epidemiological purposes is more likely to be justified in rural communities than in a large city. Going back to the Bellevue-Yorkville Survey, we find that only eight out of the 184 cases of childhood tuberculosis, that is, only eight out of 1000 children examined, came from families where there was open tuberculosis in the home.

Personally, I believe that for most of us a sound justification for a survey of childhood tuberculosis can be made only on the frank admission that we are undertaking research. We do not know, for our own community at least, how much childhood tuberculosis exists, how much of future adult tuberculosis will be derived from this group, how much we can do to prevent the progress of childhood tuberculosis into the adult form, how many cases of tuberculosis may be discovered by follow-up of the known cases of childhood tuberculosis, how much these procedures will cost us, or how much we shall save in the reduced cost of adult tuberculosis as a result of these procedures. But all these things we can find out, and it is entirely possible that our discoveries will lead to great economic saving, as well as to salvage of human life and health. It is in this spirit of hopeful enquiry that we are going forward with a survey in New Mexico next month. The survey is being financed largely through the sale of Christmas seals, and its success will depend very largely upon the generosity with which the people of New Mexico make their purchases.

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HAY-FEVER IN CENTRAL ARIZONA AND ITS TREATMENT WITH ORAL EXTRACTS.

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(Read before the Maricopa County Medical Society at Phoenix, Ariz., Feb. 5, 1934.)

Hay-fever in central Arizona presents a problem to the general practitioner, as well as to the patient. Due to the semi-tropical arid climate, an abundance of pollen is in the air from February until November, and at times may even continue through the winter months. Desensitization by the orthodox method of parenteral injections, in the multiple and hypersensitive cases, is usually a prolonged and expensive procedure. For the past three years a number of patients have been treated orally with pollen extracts with most gratifying results and with minimum expense to them.

The chief pollinators in this and the southern section of the state are cottonwood (populus maudougallii), ash (fraxinus velutina), rabbit bush (franseria deltoides), desert ragweed (franseria dumosa), Bermuda grass (cynodon-caprioola dactylon), careless weed (amaranthus palmeri), and the slender false ragweed (franseria tenuifolia). Cottonwood starts giving off its pollen usually in the first two weeks of February, lasting about three weeks. The pollen is liberated by the male tree at the time of budding. The cotton which is usually associated with these trees is the fertile seed from the female tree and is not released until a month or so following the pollination. Contrary to the general belief, this cotton does not produce hay-fever, and the symptoms prevalent at the time the cotton is seen flying in the air, in this locality, are due to Bermuda grass and the desert weeds (frans. deltoides and dumosa). Ash makes its appearance late in February and may overlap the season of the cottonwood. It, too, is produced by the male tree at the time of budding and leafing, and supplies an abundance of pollen. In March, the desert weeds (rabbit bush and desert ragweed) make their appearance. Their pollen is light and dry and easliy carried considerable distances by the spring winds. During this time some of the dried pollen from the cottonwoods and ash, remaining in the dried blooms and dusts, may also be a factor. This year, due to the mildness, these weeds began to pollinate in February. In dry years they produce less pollen but are serious offenders if there have been spring rains. Bermuda grass makes its appearance fairly early in the spring; because of its prevalence and length of pollinating season it is of major importance. Generally it pollinates well up into November; in the frost-free sections it may give off its pollen all winter. During this past winter, with its extreme mildness of weather and lack of rains, it was in the air almost daily. Its pollen is extremely fine and buoyant.

Dampened pollen sours quickly, but dried pollen keeps its potency for a long time, even when mixed with road dust. It has been my observation that pollen produced late in the pollinating seasons is finer and drier, and apparently contains less fats and oils, than the pollen produced earlier in that pollinating season. For this reason, late pollen seems to be more toxic and may account for the hay-fever cases that develop asthma later in the seasons, and not because there is more pollen in the air. One patient went through almost the entire year last year and did not develop hay-fever until November and it was found to be caused by Bermuda pollen.

Careless weed (amaranthus palmeri) begins pollinating in May and gives off pollen until October or November. It is produced by the male plant and is a fairly heavy pollen. This

weed grows abundantly in and about the citrus groves, where it causes its chief trouble.

The slender false ragweed (franseria tenuifolia) does not pollinate in the valley until the hot weather subsides. It begins in September or October, depending on the temperature. Hot weather retards its growth and pollination. This same weed pollinates in August in northern sections of the state, and by the time it begins to pollinate in the central and southern areas, where it is warmer, it has gone to seed in the cooler northern parts.

There are numerous other weeds and trees which play a more or less minor part here in causing hay-fever, but which, at times, may be of considerable importance. Canyon ragweed (franseria ambrosioides) and hymenoclea salsola begin pollinating slightly later than the rabbit bush but are less abundant. These can be seen growing along the highways east of Mesa. Olive trees are sometimes a factor in May, but the pollen is heavy and not carried far. It also contains an abundance of oil or fat. At present there are a few Chinese elm scattered in and about Phoenix. In the future they, too, may become more or less of a factor. Russian thistle (salsola pestifer), an important factor in the northern part of the State, is slowly increasing in abundance in this section and undoubtedly will be a major factor unless its spread is prevented. Johnson grass (andropogon halepensis) produces but little pollen, so is of minor importance, and is readily controlled with Bermuda desensitization. Chenopodiaceae, album, leptophyllum, and murale can be seen scattered through the valley and also have a paucity of pollen. The same is true of annual salt bush (atriplex wrightii), many seeded salt brush (atriplex polycarpa and shad scale (atriplex canescens). The later two are found south of Chandler on the Tucson highway. Bur and western ragweeds (franseria acanthacarpa and ambrosia psilostachya), which are prevalent in the northern sections of the state, are slowly creeping toward the valley. They can be seen growing along the roadside south of Wittman and Beardsley.

Three years ago, for therapeutic purposes, I started a few Bermuda sensitive patients on concentrated pollen extract by mouth. The results were so surprisingly good that the following year the same type of treatment was also used in patients sensitive to ash, rabbit bush, and slender ragweed. The results were entirely satisfactory. The oral extracts were used in conjunction with parenteral injections in some of the cases and undoubtedly were a considerable factor in reducing the number of injections for the development of tolerance.

Last year the author reported[1] the results of this form of treatment in nine patients suffering from ash, thirteen from the desert weeds (rabbit bush and desert ragweed) and thirteen from Bermuda grass. Of the nine ash patients only one took the treatment preseasonally because of a severe asthma experienced in previous years. She was sensitive only to ash and reported nearly one hundred per cent relief. Of the other eight, six obtained from ninety to ninety-five per cent relief, and one only about sixty per cent. One patient did not notice any benefit. Of the thirteen patients suffering from rabbit bush and desert ragweed, seven took the extract preseasonally and continued with them at intervals during the season. They all reported from ninety to one hundred per cent relief; of the remaining who took it only seasonally all but one obtained relief. Thirteen Bermuda sensitive cases were treated by this method. Five obtained entire freedom. Eight were under treatment by the intradermal method and took the extract as an adjunct. Three of these noticed decided benefit from the oral extract and did not require as many injections to develop tolerance. Two obtained only partial aid from the oral extract and three did not notice any added comfort. However, the following year all of these patients with the exception of one were relieved by the oral method alone.

During the past year thirty-eight Bermuda sensitive cases were treated orally. Thirty of these were practically entirely relieved and the average length of treatment was about three weeks. Of the remaining eight, three received partial relief and one of these discontinued treatment because of a mild urticaria. She was undoubtedly overdosing herself. Of the five who did not receive any benefit, two were severe asthmatics and had failed to obtain results in previous years, and also last year, with either the intradermal or subcutaneous injections. One case was relieved by the subcutaneous method only. Two were placed on intradermal injections but experi-

enced no beneficial results. One patient, my own son, was relieved by the oral method alone until the height of the Bermuda season when he developed a severe cough, which was at first thought to be due to Bermuda pollen. He was taking occasional doses orally at the time. Intradermal treatment was instituted but he failed to give any skin reaction until large doses were given. He had apparently become skin negative from the oral extract. Measles soon explained the source of his cough.

Last fall, four patients were treated for slender false ragweed. They all reported excellent results. However, ragweed was only a small factor last year as the prolonged hot weather and lack of rains caused a considerable shortage of pollen from this weed.

This spring four patients were treated for cottonwood hay-fever orally. Two obtained practically entire relief and one about seventy-five per cent. The fourth developed an intercurrent pertussis which made control difficult.

Last summer, the author gave Dr. J. T. Malone at the U. S. Veterans' Hospital in Prescott extracts from Russian thistle, careless weed, bur and western ragweeds, with which he treated a number of patients in the hospital. He obtained excellent results and reports for this area will be made later. An extract was also made from orris root with which he treated cases of narcolepsy, diabetes insipidus and Meniere's syndrome[2]. He found an associated allergy in these cases he had under his care and they were markedly improved under orris desensitization. The oral extract apparently helped them materially.

It is interesting to note that most of the patients taking the extract orally, even seasonally, were relieved in from one to three days. This was especially true in the Bermuda cases. In fact, many would obtain temporary relief in about one-half hour, and would gauge their dosage and number of doses by their symptoms. One patient who was having a severe hay-fever from Bermuda was relieved for an entire season with four or five oral doses. In the case of a nurse who was the first patient three years ago, last year she required less than one-half an ounce of the concentrated extract to carry her through the entire Bermuda season. Many of the patients were relieved for the entire season after about two to four weeks. A number took small doses off and on during the Bermuda season, waiting each time for symptoms to develop.

Two different extracts were used in the treatment of these cases. One was a concentrated extract of three per cent, in a phosphate glycerol solution; the other a one-tenth of one per cent dilution in a buffered salt solution. In the dilute solution the pollen granules were not filtered off and were taken internally with the extract. The dosage of the three per cent extract varied from three to fifteen drops, and, for the other one-half to one drachm diluted in about one-quarter glass of water. A maintenance dose twice daily with additional doses, if needed, for attacks, usually controlled them. Preseasonally, the dosage could be built up materially. Two or more pollens may be combined in the extracts.

This February and part of March there have been four pollens in the air at one time in and about Phoenix. These are cottonwood, ash, Bermuda and rabbit bush. Due to the lack of precipitation the desert ragweed (frans. dumosa) bloomed this year in March. A number of patients sensitive to all four of the above pollens are being treated at the present time. Preseasonally the dosage may be built up gradually until large doses are taken but the seasonal doses should be much smaller. Last year a physician who took the Bermuda extract seasonally reported that five to seven drops would relieve him quickly, but that fifteen to twenty would aggravate his hay-fever in about one-half hour. This spring he has built up the dose preseasonally to one hundred drops of the concentrated extract.

Utmost care must be taken in preserving the dried pollens and in their preparation, as slightly rancid pollens or extracts may cause gastric upsets. With extracts properly prepared and properly kept, preferably in refrigerator, gastric disturbances are seldom seen. Overdoses, especially during the season, produce increased symptoms shortly after the dose is taken. Reduction of dosage corrects this. A mild urticaria developed in one case and two cases developed the giant form. In these excessive amounts were taken seasonally.

Touart[3], in 1922, used the whole pollen grain orally with fair results. In a personal com-

munication he stated that at first he used too small doses. Later he started with one milligram of the dried pollen and increased the dose to substantial amounts. He stated that the method, on the whole, has been generally satisfactory but not equivalent in its effect to the subcutaneous injection of pollen extracts. He apparently was using it chiefly in the eastern ragweed cases which, judging from reports, are difficult to control. Thommen[4] used the same method in 1923 in one asthmatic case sensitive to eastern ragweeds. Entire relief of the asthma resulted, and about ninety per cent relief from his hay-fever. Black[5] also treated a number of cases in 1928 with pleasing results.

CONCLUSIONS

In the eighty-one cases treated thus far, approximately seventy-five to eighty per cent were markedly relieved. Of the remaining a few were materially helped. Where results are not obtained by oral administration alone it can be used as an adjunct along with parenteral injections. On the whole, this method has proven successful for Arizona pollens. It minimizes the expense and the discomforts from the usual injection methods. I wish to thank Drs. O. H. Brown, Trevor Browne, E. R. Charvoz, and J. J. McLoone who kindly gave me reports on the patients they treated with the oral method.

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X-RAY and LABORATORY TECHNICIAN, recently graduated from high-class teaching institution. Twenty-three years old, single, would accept reasonable salary. Address Box BB, Southwestern Medicine, Phoenix, Arizona.

WANTED — By Nurse-stenographer, position in physician's office or hospital historian. References. Address Box M, Southwestern Medicine.

INTESTINAL AMEBIASIS

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Phoenix, Arizona.

(Read before the Staff of the Good Samaritan Hospital, Phoenix, Dec. 26, 1933.)

The recent ballyhoo in the public press about amebic dysentery is very much worth while and is serving a purpose. It is helping to educate the public. Heretofore, when a patient was informed that he had amebae or flagellates in his stools, he looked at you and wondered if you were just right, or just what it was all about. In fact, it is very rare that a lay person has ever heard of such a condition. The reason for calling it ballyhoo is that the term amebic dysentery is very misleading, because very few people harboring amebae in their intestinal tract have dysentery at any time. A more proper term for this condition is intestinal amebiasis. And it also should be emphasized that the ameba is only one of several pathogenic parasites that inhabit the intestinal tract of man. There are even several forms of amebae, and many of our best text books and references will state that the Endamoeba histolytica is the only pathogenic form and that all other forms are harmless. Such statements can be made only by authors who do not publish personal observations.

Like all infections, amebae vary in virulence and possibly the virulence varies in the different temperature zones; that is, more virulent in the tropics than in the temperate or frigid zones. Anyway, amebic dysentery in the tropics is a very common occurrence. I mean by that, the severe, prostrating, fulminating form of the disease with severe dysentery and high fever. While in the temperate zone it is really rare to have a patient in whom the amebae, and this applies to the histolytica type, give a history of anything approaching an attack of spells of bloody diarrhea and high fever.

The literature abounds in statistics on the incidence of amebae and some time ago Craig of New Orleans made an attempt to arrive at an average or conservative estimate of the incidence of this infection. These statistics vary from as low as .2 per cent in a series of 522 patients studied by Andrews and Paulson in Baltimore, to as high as 53 per cent, in a series

of 154 students at the University of California. Back in 1911 Sistrunk reported an analysis of 145 patients observed at the Mayo Clinic, with twenty-five infected with amebae, or about 16 per cent, and half of these patients had never been elsewhere than in the Northwestern states. In New Orleans, Faust found 13.7 per cent of infections in 1100 cases. In the Army Medical School at Washington, Craig found twenty-four out of 189 medical students, or 12.7 per cent, infected. No nation-wide survey has ever been made, but in a report of several hundred cases which came to the Mayo Clinic, a chart published about two years ago showing the geographical distribution, showed cases from almost every state in the Union. Several years ago Barrows made a routine study of 1000 consecutive admittances to the Los Angeles General Hospital and found 8 per cent harboring intestinal parasites of one kind or another.

On the basis of these various reports, Craig estimates that it is conservative to say that 5 per cent to 10 per cent of the population harbor amebae, or in other words, on a basis of a population of 120 million, between 6 and 12 million are infected. He adds that if one wished to be extremely conservative he could place the figure at 1 per cent and we would still have 1,200,000 cases of amebae in the United States. Now, in the city of Chicago, with 3,000,000 people, there are 30,000 cases of amebae at the most conservative estimate. So it can only be said that Dr. Bundensen's report of 100 cases is far out of line of the actual figures, if they were only compiled. Of course his 100 cases might represent the number of cases of dysentery in 30,000 people. Or, perhaps, the ameba acts like the influenza infection and takes on added virulence at times, and there is actually a virulent outbreak over the country. But even if only 100 out of 30,000 cases have dysentery, every one of these 30,000 presents the same public health hazard, i.e., every one of these 30,000 is a carrier and disseminator of the disease.

Magath of Mayo Clinic says: "It is difficult to estimate the degree of infestation throughout temperate America. Some men, such as Colonel Craig, believe that the disease is present in from 5 to 10 per cent of the population. The figures of Meleney for certain isolated regions in Kentucky and Tennessee would indicate that the percentage is much greater, but our figures, which include a fairly representative cross section of the country, indicate that the infestation is not greater than 2 to 3 per cent. Whatever the figure is, it would indicate that a large number of people are suffering from, or harboring, this parasite in their intestinal tracts.

"The method of spread of the organism, while not clearly understood, evidently has as its basis the old question of preventing the excreta of one human being from finding their way into the food and drink of another, and apparently civilization has not progressed to the point where this can be prevented. Unfortunately for man, transmission of the disease is by cysts which are relatively resistant. They may exist for as long as six months in water and may pass through the gastro-intestinal tract of the common house fly without injury. Chlorine, which is so generally used for the purification of water supplies, is relatively ineffectual; it takes a hundred times as much chlorine to kill the cyst of the ameba as is used in water supplies. While the ameba in the motile stage is quite readily killed, it is possible to transmit the disease by means of these forms, but the passage must be direct. Both the cysts and the motile forms are readily killed by drying and by a temperature as high as 68° C. for five minutes. Craig emphasizes as a mode of transmission, water supplies, and it is obvious that a contaminated water supply would readily account for many cases. Flies have been repeatedly incriminated, and Craig studied, in 1916, an epidemic of amebic dysentery in El Paso, Texas, in which he demonstrated flies as the transmitting agent. The cyst will not only pass through their intestinal tracts to be left on food, but will adhere to the feet of flies and thus be transmitted to food and water. Kofoid has emphasized the transmission of the disease by tub baths, and has advocated the universal use of showers to prevent this mode of transmission. In the present epidemic, it is evident that food has played an important part, becoming contaminated by the hands of carriers who are uncleanly in their personal hygiene. It would seem that this is to be the outstanding contribution from the Chicago epidemic, where it appears clearly established that the transmis-

sion by carriers in kitchens of hotels and restaurants is a very important consideration."

Now, just because 1 per cent or 5 per cent of the population harbor amebae, it doesn't mean that all these people are suffering from it. Craig, however, estimates that 30 per cent to 40 per cent present symptoms. Figures like Dr. Barrows', showing 8 per cent in 1000 consecutive admissions to Los Angeles General Hospital, can be interpreted in the opposite conclusion, namely, that their intestinal parasites are meaningless and cause no trouble.

Possibly a discussion of the symptomatology of amebiasis might help to make these statistics more convincing. I do not know what the usual history of cases of amebiasis in the tropics is. It is possible that these parasites enter the intestinal tract in much larger numbers from contaminated water supplies or other sources in tropical climates and thereby produce the acute fulminating symptoms of the disease which are so common there. But in this country the history of the average patient is that of an insidious onset of symptoms. I have seldom taken a history of a case of intestinal parasites that does not give a history of symptoms extending over a period of at least ten years. The longest period of symptoms that I can recall is that of a man who had a bloody diarrhea while on a mining trip in Old Mexico 39 years ago.

The commonest symptom of amebiasis is no doubt constipation, and this may be the only symptom present for years. A frequent complaint is alternating spells of diarrhea and constipation; or a patient may only mention a tendency to looseness. On the other hand, one may have many other symptoms of amebiasis with perfectly regular bowels and the attention may never be directed toward the colon.

Abdominal symptoms come next. It is surprising how many patients have intestinal parasites and never complain of abdominal distress. But if distress is present it may vary from attacks of cramping pains, which at times may be very severe, to a generalized soreness along the entire course of the colon. If attacks of cramping pains are present, there may be no tenderness or soreness of any kind between attacks. The commonest site of cramping pains is over the cecum and ascending colon. The next commonest site is over the sigmoid and descending colon. Because of these cramping pains in the region of the cecum, one of the first things that usually happens to amebic patients is out with the appendix. Pains in the region of the hepatic flexure simulate gallbladder attacks so frequently that few chronic cases of amebiasis escape without a cholecystostomy. Now this does not mean that these patients do not have chronic cholecystitis and chronic appendiceal disease. In fact, I doubt if many old chronic cases of amebiasis escape without some gallbladder pathology. And amebiasis should be considered one of the frequent etiological factors of cholecystitis. The point is that postoperative gallbladder cases who fail to improve should be suspected of having amebiasis. Such ordinary gastric symptoms as belching, regurgitation, hyperacidity, and nausea and vomiting may be present occasionally. Food selection is most typical of gallbladder disease, but some amebic patients are compelled to follow the bland type of diet. So the mere fact that ameba may be found in the stools is no reason that ulcer, gallstones, or even malignancy, is not present. I have in mind a man whom I examined four years ago, but who postponed treatment until this past spring, when he became much worse. After not responding to treatment, he went to Mayos' and they diagnosed and operated for malignancy of the colon.

The next commonest group of symptoms are what might be classed as nervous or neurological symptoms and the most frequent one here is headache. Amebic patients may have intense headaches at times. These headaches are usually associated with constipation or may develop soon after a meal, and are one of their most annoying complaints. After headache come various forms of neuritic, sciatic, rheumatic and arthritic pains. This is a time when many may claim that the findings of intestinal parasites in rheumatic and arthritic patients is just a coincidence. But it is surprising how many of these patients can be relieved when they are treated for their parasites. Barrows was one of the first to claim that intestinal parasites were a common etiological factor in arthritis. During a discussion of arthritis at the A. M. A. meeting in Dallas in 1926, Barrows commented on this point, only to be ridiculed. It is generally

agreed that the streptococcus is the cause of arthritis and it is not difficult to visualize a colon ulcerated by ameba as being the portal of entry for the streptococcus.

Under the heading of neurological symptoms, also come the mental symptoms that many amebic patients complain of. A peculiar malaise or melancholia is frequently observed. This may be due to the headaches which are so continuous in some patients, or to the abdominal distress, or to the extreme exhaustion which is so commonly present in these old chronic sufferers. Crying is not unusual and all these people can say is that they feel so badly all over that they are unable to do otherwise. Dizziness is another complaint, and so is a feeling of exhaustion for several hours after a bowel movement. Many of these symptoms must be due to toxic absorption from the ulcerated colon.

Another common finding in intestinal amebiasis is secondary anemia which may approach severity at times. A red count of 3,000,000 and hemoglobin of 60 per cent is very common. This is the result of loss of blood from the ulcerated wall of the bowel. These patients usually have repeated positive Weber tests for occult blood, and, if malignancy is out of the picture, ameba is the most likely cause. A rather profuse hemorrhage from the bowel is not uncommon, and the average patient will surmise that it came from an internal hemorrhoid, and, just as likely as not, a careful search for a bleeding pile through the proctoscope fails to reveal any evidence of bleeding. More or less mucus in the stools is usually found, but the presence of pus speaks against amebiasis. Eosinophilia, which was supposed to indicate intestinal parasites, probably has little significance. One of the less frequent symptoms of amebiasis is fever. If temperature is present it usually runs a characteristic curve. A constant daily rise of 99° to 99.6°. And another feature is that it seldom comes to normal even in the morning. An early morning temperature of 99° which goes up later in the day to around 99.6° is the rule. And if patients run a temperature, they are very liable to have night sweats. These are the patients in whom it is necessary to differentiate between tuberculosis and amebiasis, and it is not to be overlooked that, due to the frequency of these two diseases, every now and again a patient has both.

Amebiasis is not to be confused with the so-called idiopathic ulcerative colitis. This is a definite clinical entity in which Bargen claims to have isolated a specific diplococcus and he has had unusual results with vaccine therapy. But other investigators have had difficulty in duplicating his work.

There are occasional sporadic cases of bacillary dysentery in the Southwest, which has no connection with amebiasis. They are caused by the Shiga or Flexner bacillus and are detected by cultures from the stools. A condition that is of importance to those of us who reside in this desert area of the Southwest is this almost universal occurrence of spring dysentery. This is a condition which I believe very few inhabitants of this region escape. As far as I have been able to determine, this condition occurs in an area extending from the west side of the Rocky Mountains on the east, to and including the Imperial Valley on the west. It does not occur in Los Angeles nor the coast cities, but I have no idea how far north it may occur. This can have no connection with amebiasis nor bacillary dysentery because by far the greatest majority of the inhabitants have a dysentery lasting from 24 to 48 hours and recover without ill effects. Of course when a person who has amebic colitis is affected by this condition we may have a very sick patient; and this likewise applies to other invalids. It is difficult to attribute this condition to foods, as even nursing babies are afflicted with it, and another unusual feature is that passengers riding on transcontinental trains become afflicted as soon as they cross the Rocky Mountains and start crossing the desert. The only element I can see to which every one is so universally exposed in this area described, is the air. For that reason I have wondered if this might be an allergic condition produced by ingestion of large amounts of desert pollen from the air.

There are numerous other features of intestinal amebiasis of which time does not permit discussion here. And the treatment of this disease is still another chapter.

MALPRESENTATIONS AND THEIR MANAGEMENT

DUDLEY FOURNIER, M. D.
Phoenix, Arizona.

(Read before the Staff Meeting of the Good Samaritan Hospital, Phoenix, Jan. 23, 1933.)

As this is quite a large subject to cover in the short space of time allotted, I am going to touch briefly on the more common malpresentations and their management.

The first will be persistent occipitoposterior position. In these cases labor is slower and longer; early rupture of the bag of waters is frequent and dilatation of the cervix is incomplete because the head does not fit well into the pelvis. The early diagnosis of this condition is made by the presence of freely movable soft parts above and just to the left of the umbilicus. Heart sounds are heard with maximum intensity in the flank. As regards treatment, what you do depends upon what nature has not done or is doing improperly. There is no arbitrary method of treating this condition. Treatment, when decided upon, should be directed toward the relief of retraction and accomplishing dilatation rather than toward securing anterior position for the presenting part.

If the head is arrested at the pelvis inlet, internal podalic version and breech extraction is the procedure of choice. With the head at the pelvic outlet and with relative inertia, the most satisfactory treatment consists in producing anterior rotation artificially. Manual rotation is difficult and often impossible if the head is large. With the head relatively small it may be fairly easily rotated, but the back and shoulders must be made to rotate anteriorly at the same time.

If forceps can be applied, the double application known as the Scanzoni maneuver is a familiar method of producing advance. I personally prefer the method of manual rotation and forceps to forceps rotation, for the following reasons: (1) By using the hand, the operator is able at all times to know whether the head is responding to manipulation or not. (2) If rotation is not easily accomplished at the level at which the head is found, the head may easily be shifted upward or disengaged, if necessary. If the latter is found necessary, prolapse of the cord must be watched for. Before proceeding to manual rotation and forceps, the head must be engaged and the second stage should not have been allowed to proceed so long that a contraction ring has formed. Ether anesthesia should be used, as we must have a large degree of relaxation.

Transverse presentation is a fairly common cause of dystocia. In the past seven years I have had six cases—two were delivered by cesarean section and four by version and extraction.

It is advisable to preserve the bag of waters, in cases of transverse presentation, until the cervix is completely dilated. This is best done by the insertion of a vaginal bag as soon as labor has become definitely established. It lessens the likelihood of early rupture of the bag of waters by exerting counter pressure on the membranes, preventing the shoulders from becoming wedged into the pelvis and, in the event the membranes do rupture, it impedes prolapse of the cord. As complete cervical dilatation is approached, the bag is usually expelled by the bulging membranes, when version and extraction may be readily affected.

In cases in which the membranes have ruptured early in labor or before its onset, the question of treatment is more difficult. When the undilated cervix is long and thick, the child viable and no contaminating examinations have been made, cesarean section would certainly seem to be the method of choice and particularly so if there is any degree of pelvic contraction. Low cervical cesarean section will be the type of abdominal delivery most often indicated. The intra-uterine bag has proved very unsatisfactory when used after the membranes have ruptured, as it predisposes to hourglass contraction of the uterus. This is an important cause of fetal death.

The chief danger to the mother in transverse presentations rests not so much in the mechanical difficulties associated with the transverse position of the fetus, but in certain accompanying conditions, particularly early rupture of the membranes, incomplete dilatation of the cervix, placenta previa—complications which are often the forerunners of intrapartum infection and rupture of the uterus.

A new product that has just been released by the Squibb Laboratories is Squibb Halibut-Liver Oil Concentrate Tablets with Viosterol 250-D. These highly potetnt, chcoolate-coated tablets will be prescribed by physicians as an alternative means of administering the vitamins of Viosterol-fortified Halibut-Liver Oil.

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PUBLIC HEALTH NOTES

J. ROSSLYN EARP, Dr. P. H.
Director New Mexico State Bureau of Public Health

SYPHILIS

There is no task in the whole field of preventive medicine of more urgent social importance than the control of syphilis. Nor is there one, unless it be the prevention of diphtheria, which we can more hopefully undertake. Drs. Smith and Brumfield[1] have shown how cases of active syphilis may be detected. When brought under treatment these cases can rapidly be rendered non-infectious. By proper cooperation between health officials and practising physicians, it is possible to stamp out rapidly the existing foci of infection. However desirable it may be that the current sex mores of the population be revised, we are not bound to wait for such a revision before we put into effect our program of control. We can do it now. And if we should start now in a serious manner to assume this obligation, unemployment among physicians would be a thing unknown. Nor should the additional employment be entirely honorary, for the treatment of syphilis is plainly compensable from federal aid under Regulations No. 7.

Timely help is available to such a campaign through the recent publication of J. E. Moore's "The Modern Treatment of Syphilis."[2] No one who is treating syphilis can afford to be without this splendidly organized, thoroughly scientific and right up-to-date work. The author has drawn upon the experience of his own syphilis clinic at Johns Hopkins Hospital and also upon the results of many years of study by an important cooperative clinical group well known to every syphilographer. The book is not a discursive thesis but a complete system of didactic teaching. The continuous method of treatment is, for example, given unhesitating preference over the intermittent. Numerous tables summarize neatly the teaching on specific subjects, as for example the following on the principles of treatment of the syphilitic pregnant woman:

1. Treatment during pregnancy is for the child, not for the mother. Treat her later.
2. The aim is prevention of infection in the fetus if pregnancy is early; its "cure" if late.
3. Use maximum treponemicidal attack throughout.
4. Arsphenamine (606) is better than other arsenicals in this instance. Use it when possible.
5. Give a minimum of 3.0-4.40 gms. arsphenamine (10-40 doses) if time permits—but no matter how late, give some arsphenamine.
6. Plan treatment so that it starts and ends with arsphenamine—a few doses just before delivery.
7. Use some heavy metal—bismuth or mercury—in combination or alternation with arsphenamine.
8. Continuous treatment—no rest periods.
9. Don't fear treatment reactions unduly, but watch the mother's sclerae, urine, and blood pressure.
10. The fetus will not be harmed by treatment.
11. Study the infant by means of
    a. Cord Wassermann
    b. Placental histology
    c. X-ray of entire skeleton
    d. Pediatric follow-up for minimum of 6 months.
12. Treat the mother's syphilis after delivery.

The author quite definitely prefers the insoluble to the soluble salts of bismuth. New Mexico colleagues are asked to make a note of this when ordering bismuth for indigent cases through the state bureau of public health. We can supply a bismuth salicylate preparation at a small fraction of the cost to relief funds of the water-soluble salts. This preparation may need warming a little before it will pass through the needle but will otherwise give satisfaction.

DEEP BREATHING EXERCISES

Thirty or forty years ago we all were taught that deep-breathing exercises were valuable in the prevention of tuberculosis. The theory as it was stated to me in childhood was somewhat as follows: Tuberculosis begins in the lung apex. This is the part of the lung that is not used in quiet breathing. Therefore, breathe deeply and avoid tuberculosis. We now know that if it were true that tuberculosis began in the apex of the lung it would also be true that the more oxygen carried to the bacillus the more it would flourish. We also know that the best treatment for a tuberculous lung in any stage of the disease is not exercise but rest. It has been a source of recurring grief to me to read in school textbooks of hygiene the still repeated advice to practise deep breathing. But imagine my dismay when I read in Southwestern Medicine (and also in the Kiwanis Magazine) the advice of my friend Carl Gel-

lenthien of Valmora Sanatorium to practise deep-breathing exercises for the prevention of the common cold! Come forth now, ye advocates of puffing, and tell me why!

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"PUFFING AS A FINE ART"

CARL H. GELLENTHIEN, M. D.
Valmora, New Mexico

Deep breathing was included as one of eighteen points that I enumerated as having some value in the prevention of the common cold. I am sorry to read of the "grief" and "dismay" this recommendation for deep breathing has caused Dr. Earp.

While Dr. Earp's friendly and humorous criticism of my recommendation for the deep breathing exercises in prevention of the common cold is most welcome, unfortunately Dr. Earp received the impression from my article that I was talking about pulmonary tuberculosis, which, of course, contraindicates any deep breathing on the part of the patient. I do not believe that anyone is foolish enough to recommend, nor even seriously consider, deep breathing for tuberculosis, in the light of our present knowledge. Contrariwise, deep breathing exercise and "puffing" into Wolff bottles, and so forth, are definitely indicated in massive collapse of the lung and empyema. Do we not hear deep breathing advocated after abdominal operations in the attempt to prevent atelectasis? Does not the obstetrician strive to make the new-born infant breathe deeply, by making him cry, by change of position, by slapping, friction and bathing?

When we speak of the common cold, however, we are dealing with a disease, the cause of which we do not know, nor any scientific method of prevention, nor do we have any specific form of therapy. One thing we do know, however, and that is that the common cold is a disease and it is also common knowledge that we humans are more susceptible to disease when we are run-down or below par. There are some of us who are still old-fashioned enough to believe that a normal, robust, healthy individual has more immunity or resistance to disease. Deep breathing exercises are an attempt to keep the respiratory organs well exercised, well developed and to promote their approach toward the normal physiology. Deep breathing exercises, per se, are an attempt to cause a better ventilation of the lungs by expelling the stagnant supplemental air and replacing it with fresh air and so attempt to bring the physiology of the lower respiratory tract closer to normal. It is, of course, evident that when we recommend deep breathing we are attempting to increase the vital capacity of the patient's lungs. It is also fitting, at this point, that vital capacity and supplemental air be defined.

Howell, in the eleventh edition of his Text-book of Physiology, defines vital capacity as "the quantity of air that can be breathed out by the deepest possible expiration after making the deepest possible inspiration, and is used in the gymnasiums and physical examinations for this purpose." The supplemental air, he defines, "as the amount of air that can be breathed out after a quiet expiration by the most forcible expiration."

During the world war many phases of scientific investigation were stimulated tremendously. The very struggle for existence brought out from all nations the best that could be found and consequently many scientific facts were added to the store of knowledge of the human family. It was during this time that the vital lung capacity test found one of its most useful periods. For various branches of the service, men were needed in great numbers and time did not always permit a careful and complete physical examination; any test, therefore, which would quickly eliminate those afflicted with serious conditions of the heart and lungs was of great value. Georges Dreyer, working with the British forces, pointed out that the vital capacity test was being used as a routine in the examinations of candidates for the British Flying Service and that it served as a decisive factor in election to or rejection from that service. Dreyer states that "A definite minimum standard of vital capacity was fixed more or less arbitrarily for the admission of cadets to the Royal Air Force and standards were also decided upon for the grading of flying officers for different types of service. In laying down rules in this connection the question of the size of the man was entirely disregarded as of no consequence, and the standards were arrived at simply as the result of examining a number of successful pilots and determining the average vital capacity.

Dr. J. A. Myers, in the preface to his book, "Vital Capacity of the Lungs," states the following: :

"The study of the vital capacity of the lungs alike in health and disease has received widespread attention during the past decade. In the development of a new diagnostic test or the revival of an old one there is usually a group of individuals who grow over-enthusiastic and make extravagant claims for it, while another group of individuals minimize and discredit its value at every opportunity. The vital capacity test, since its scientific introduction of more than three-quarters of a century ago, has been the subject of extravagant promotion as it has of severe criticism. However, it has stood well the test of time and today is regarded by scientific investigators, internists, pediatricians and general practitioners as a valuable aid in diagnosis, prognosis and the guidance of treatment of certain diseases, particularly of the heart and lungs. An eminent surgeon has pointed out that even in operative work upon the chest many lives may be saved through a careful study of the vital capacity of each patient before operation; while another has

stated that a careful estimation of the vital capacity may closely parallel the results of a general examination and a recent study has shown that it may be of great aid to the surgeon in the determination of operative risks."

Myers has clearly shown that diseased individuals have a vital capacity ten to fifteen per cent lower than the normal for his class.

Dreyer believes occupation to be so important that he groups all people into three classes, which he designates as A, B, and C. In class A he places men in army or navy life; anyone who has had long military or naval training regardless of his previous occupation; policemen, athletes and active sportsmen; university students (playing games); firemen, blacksmiths and boilermakers. In class B fall professional people (doctors, lawyers); business men, railway men, high-grade mechanics and clerks of the upper class. In class C he places tailors, shopmen, shoemakers, printers, potters, clerks of a lower class and painters. Dreyer believes that individuals who spend considerable time in the open air playing games, may bring themselves into class A regardless of their occupations.

In other words, it is desirable to have a normal vital capacity, and deep breathing exercises in the fresh air are the means of procurement.

Dr. Myers also recommends as follows: :

"The time is at hand when all persons should know their actual vital lung capacities, just as they should know their actual heights and weights. Any person who loses several pounds in weight has reason to seek the cause; so, also, any person whose actual lung capacity decreases more than ten or fifteen per cent has just cause for seeking investigation. Many persons would become familiar with their actual vital lung capacities if spirometers were made available as weighing scales are. To install accurate spirometers and tables with normal vital capacities and weights in many places where they would be available to the public, would be an excellent public health measure. To be sure, some method would have to be devised to insure a sterilized mouth piece for each person. Perhaps one could be made of heavy waxed paper and used as the paper drinking cup is today. The taking of one's vital capacity and its comparison with the theoretic normal is so fascinating as to insure extensive use of spirometers if they were made available to the public. Moreover, the readings obtained from scales and spirometers are so concrete as to be convincing to the ordinary citizen. I am convinced that such a method would result in bringing many who suffer from heart or lung disease for definite diagnosis and treatment long before they would, otherwise, present themselves. Thus many more persons would arrive while in the curable stages of disease."

To me, it seems good sense to recommend deep breathing exercises, and to stimulate the interest of the layman in his lung capacity. There is no question but that vital capacity of the lungs is of value in the diagnosis, prognosis and treatment of disease. In attempting to prevent a disease for which we have no scientific procedure, I shall continue to recommend deep breathing exercises for individuals without organic chest trouble because it will make the patient "fresh-air conscious" and tend to help him avoid infection by contact with the coughing and spitting of his fellowman, and tend to produce a normal respiratory tract physiology, and place the individual in class A of Dreyer's classification.

For anyone to believe that breathing deeply, per se, is a specific preventive for the common cold is utterly ridiculous.

Of the eighteen measures that I recommended in the outline for the prevention of colds, deep breathing exercises is but one, and I repeat again that at present we have no means nor procedure that has any scientific value in the prevention of colds. All we can do it to try and avoid infection and to have the individual of such robust vitality that if infection occurs his resistance will be adequate enough to promptly overcome the invader. I repeat this so that the reader may not gain the impression that the advice to breathe deeply was the sole method to attempt the prevention of colds.

If the advice to the patient to breathe deeply is pernicious, then so is the advice to develop a correct posture and the advice to keep his muscular system in tone by golf, horseback riding and other sports. In the prevention of an infection like the common cold, for which we have no scientific preventive nor specific therapy measures, I shall continue the attempt to make my patient physically robust and normal by advice to breathe deeply of clean fresh air, to maintain a correct posture, to exercise in the fresh air when possible, to eat and sleep properly, to keep his teeth in good shape and to abide by all the other rules of sane living.

And so, to my distinguished critic I say: "Be not dismayed, but go thou and puff likewise."

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Sectional Meeting of the American College of Surgeons—Arizona, New Mexico, Western Texas

Phoenix, Arizona
March 16 and 17, ,1934

Arizona sunshine welcomed the opening of the convention with some of its warmest March rays—and remained at its brightest throughout the two-day convention.

Registration of surgeons and visitors attending the convention was taken at the Hotel Wesward Ho, in the lobby, beginning at 8 a. m. on Friday, and, starting at the same time operative clinics were held at both local hospitals. Student nurses were stationed in the lobbies of the hospitals to direct the visiting physicians to the operating rooms. During the course of the morning the following operations were performed by local surgeons: At St. Joseph's Hospital, pelvic laparotomy under spinal, phrenicectomy under novacaine, autogenous bone graft to spine under ether, appendectomy and herniorrhaphy under spinal, cholecystectomy under novocaine. ..At Good Samaritan Hospital: Two appendectomies, two pelvic laparotomies, and a tendon repair were performed. An attentive audience was found at each operation.

From 9 to 12 a. m. a Hospital Round Table Conference was held at the Hotel Westward Ho, conducted by Robert Jolly of Houston. As a basis for the discussion a list of questions was used which had been assembled pertaining to problems which have arisen in the hospital field during the past year.

From 12:30 to 2:30 p. m. the following Medical Motion Pictures were shown at the Hotel Westward Ho:

Infection of the Hand: Allen B. Kanavel, M. D., Chicago, Professor of Surgery, Northwestern University of Medicine School.

Circular Suture of Blood Vessels: Herbert Thurston, M. D., Indianapolis, Professor of Experimental Surgery, University of Indiana Medical School.

Hernia of the Diaphragm: Philemon E. Truesdale, M. D., Fall River, Mass., Surgeon Truesdale Hospital.

Repair of Ureterocele, Cystocele and Lacerations of Cervix. Harold O. Jones, M. D., Chicago, Associate Professor of Gynecology, Northwestern University Medical School.

At 2:30 p. m., Dr. Winifred Wylie. Arizona State Chairman, presided at a joint hospital conference consisting of doctors, trustees, superintendents, nurses, and others interested. Dr. Malcolm T. MacEachern took the place of Dr. Franklin H. Martin in discussing the Hospital Program of the American College of Surgeons in Relation to Present Day Practice of Medicine and Hospital Care. Dr. Charles A. Dukes spoke on the Role of Our Hospitals in the National Recovery Act. Following Dr. Dukes, Dr. MacEachern discussed the Organization of the Various Departments of a Hospital and Their Proper Co-ordination from the Standpoint of Serving the Patient. He laid special emphasis on the obstetrical department, stressing the necessity of segregating the patients, personnel, and the delivery room from the rest of the hospital. Responsibility of the Medical Staff and Hospital Management in the Care of Cancer Patients was the subject presented by Dr. Robert B. Greenough. He talked of radical operations, the use of x-ray and radium in regard to adequacy of treatment, exploratory operations in doubtful early cases, and the advisability of keeping follow-up records on cancer cases. Mr. Robert Jolly, while not scheduled on the program, gave a very interesting explanation of the Group Hospitalization Plan. The Problem of Maintaining Maximum Efficiency at Minimum Cost in the Hospital Care of the Sick and Injured was discussed from the viewpoint of the medical staff by Dr. Edgar C. Yount of Prescott, Arizona; from the viewpoint of the hospital management by Mr. J. O. Sexton, Business Manager of the Good Samaritan Hospital, Phoenix, and from the viewpoint of the Nursing Staff by Miss Christine Ballman, R.N., Instructor of Nurses at St. Joseph's Hospital School of Nursing, Phoenix.

The Annual Meeting of the Fellows of the College was held at 5 p. m., the chief topics of interest being a report of activities of the college and election of state officers for Arizona. Dr. Win Wylie was elected chairman, Dr. John E. Bacon, councillor, and Dr. E. Payne Palmer, secretary.

On Friday evening at 8 p. m. a Community Health Meeting held at the Phoenix Union High School Auditorium, which has a seating capacity of 2150 drew a "full house" attendance. The audience exhibited a gratifying interest throughout the entire program which consisted of the following addresses:

The American College of Surgeons—Its Message for You: Franklin H. Martin, M. D., Chicago; Director General, American College of Surgeons.

Cancer—It Is a Curable Disease; Robert B. Greenough, M. D., Boston, President-Elect, American College of Surgeons.

Scientific Medicine—Its History: Howard C. Naffziger, M. D., San Francisco; Professor of Surgery, University of California Medical School.

Saving Your Eyesight: Edward H. Cary, M. D., Dallas; Professor of Ophthalmology and Otolaryngology, Baylor University College of Medicine.

Periodic Physical Examinations: Thomas M. Joyce, M.D., Portland: Associate Clinical Professor of Surgery, University of Oregon Medical School.

Diseases of the Throat: Gordon B. New, M. D., Rochester; Professor of Rhinology, Laryngology, and Stomatology, Mayo Foundation.

Charles A. Dukes, M. D., Oakland; Vice-President-Elect, American College of Surgeons.

(Continued to page 145)

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ARIZONA STATE MEDICAL ASSOCIATION

Forty-Second Annual Session
Prescott, June 7, 8 and 9

The completed program for the Annual Meeting of the Arizona Association was not quite ready for publication this month. It will appear in full in the May issue. Dr. G. H. Fitzgerald, of Tucson, who is the chairman of the Committee on Program, has again brought together a notable array of papers, a partial list of which follows:

Dr. George Colvard, of Deming, N. M., the Fraternal Delegate from the New Mexico Medical Society, will give a paper on "Rural Obstetrics—Delivery in the Home."

Dr. Frank Goodwin, Fraternal Delegate from the El Paso County Society, will present a paper on "A Bone Brace to Prevent Toe Drop in Paralytics."

Dr. Samuel D. Ingham, of Los Angeles, Professor of Nervous Diseases, University of Southern California Medical School, will give an address on "Neurologic Conditions Commonly Associated with Diabetes, Pellagra and Pernicious Anemia."

Dr. Arthur Smith, of Los Angeles, will give a paper on "Plastic Reconstruction Surgery of the Head."

Dr. Dudley Smith, of San Francisco, will give a paper on "The Menace of Rectal Suppositories—Care of Rectal Cases."

Dr. Howard K. Gray, of the Mayo Clinic, will give a paper on "Surgery of the Biliary Tract."

Dr. Louis B. Baldwin, of Phoenix, will write on "Treatment of Secondary Anemia."

Dr. Roy Hewitt, of Tucson, will write on "Proctoscopy as an Aid to Diagnosis."

Dr. John W. Flinn, of Prescott, will give a paper on "Anorexia."

Dr. M. I. Leff, of Glendale, Ariz., will give a paper on "Common Sense About Medical Ethics."

Dr. Emilio Urriolagoita, of Nogales, Sonora, Mexico, will present a paper on "Some Observations on Goitre Operations."

Dr. Howell Randolph, of Phoenix, will give a paper on "Pneumothorax Treatment in Acute Lobar Pneumonia, — Report on Eighteen cases."

Dr. R. K. Smith, of Tucson, will write on "Postpartum Hemorrhage."

Dr. C. A. Thomas, of Tucson, will write on "Collapse Therapy in Tuberculosis" and will show a thirty minute moving picture of Thoracoplasty.

Dr. R. F. Palmer, of Phoenix, will give a paper on "Rating Permanent Partial Disability by Functional Measurements."

Dr. W. Warner Watkins, of Phoenix, will give a paper on "Roentgen Therapy of Inflammations."

Dr. E. A. Gatterdam, of Phoenix, will give a paper on "Nasal Allergy."

Dr. W. O. Sweek, of Phoenix, will be on the program, title of paper not yet received.

Dr. Orville H. Brown, of Phoenix, will make a report, as Chairman of the Committee on Economics, to the open meeting of the House

of Delegates, bringing some important recommendations.

Very important matters relative to the medical work for the Industrial Commission will be brought before the Association, with recommendations for the consideration of the House of Delegates.

WOMAN'S AUXILIARY
Arizona State Medical Association

FOREWORD

The Woman's Auxiliary to the Arizona State Medical Association will hold its state convention in Prescott, June 7, 8, 9, 1934, and extends a hearty welcome to all guests, whether members of the Auxiliary or not. The meetings and entertainments are open to everyone, and we extend a special invitation to those not conversant with the aims and works of the Auxiliary.

May we hope the following program will be of such interest that the events planned will be largely attended, thus making the innovation of morning sessions in our convention a real success.

The Convention Committee.

PROGRAM
Headquarters: Hassayampa Hotel

Thursday, June 7

Registration of local and visiting doctors' wives.

Executive Board Business Meeting. Time and place announced later.

Friday, June 8

8:00 a. m.

Registration. Hotel Hassayampa.

9 a. m.

General Meeting. Mrs. C. R. Swackhamer, president, presiding.

Singing: "America."

Invocation.

Greetings of Welcome.

Response—Mrs. C. A. Thomas, Tucson.

Announcements by Local Convention Chairman.

Minutes of last State Meeting and Executive Board Meetings—Mrs. C. C. Craig, Phoenix.

President's Report—Mrs. C. R. Swackhamer, Superior.

Reports

Committee on Credentials and Registration.

President-elect—Mrs. J. M. Greer, Phoenix.

Corresponding Secretary—Mrs. O. W. Thoeny, Phoenix.

Treasurer—Mrs. W. A. Schwartz, Phoenix.

Standing Committees: Reports and Recommendations, five minutes each.

Organization—Mrs. J. M. Meason, Chandler.

Hygeia—Mrs. George C. Truman, Phoenix.

Public Relations—Mrs. C. V. Barley, Tucson.

Press and Publicity, Archives and Historian, Mrs. J. C. Wilson, Wilcox.

Legislative—Mrs. H. P. Mills, Phoenix.

Program—Mrs. J. M. Greer, Phoenix.

Unfinished Business.

New Business.

Reports of County Presidents.

Reports of Committee on Resolutions.

Reports of Nominating Committee.

Election of Officers.

Report of Delegates to National Convention at Milwaukee.

Saturday, June 9

Final Report of Committee on Registration.

"Report of an Active Auxiliary in Vienna, Austria"—Mrs. R. J. Morrisey, South Dakota.

Introduction of New Officers—Mrs. C. R. Swackhamer, Superior.

Post Convention Board Meeting — Mrs. J. M. Greer, presiding.

Entertainments

Several delightful affairs are being planned by the Prescott ladies.

Officers and Committee Chairman

President—Mrs. C. R. Swackhamer, Superior

President-Elect—Mrs. J. M. Greer, Phoenix

Recording Secretary—Mrs. C. C. Craig, Phoenix

Corresponding Secretary—Mrs. O. W. Thoeny, Phoenix.

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Legislative—Mrs. H. P. Mills, Phoenix.

Press and Publicity—Mrs. John Wilson, Wilcox.

Public Relations—Mrs. C. V. Barley, Tucson.

E. MEAD JOHNSON

Announcement has come of the death on March 20th, of Mr. E. Mead Johnson, President of Mead Johnson & Company, of Evansville, Indiana.

The medical profession of the country will sorrow at the receipt of this news, because they have lost an understanding friend and an earnest co-worker. It is difficult for manufacturers to maintain ethical standards in business relations and in advertising which will meet the requirements of medical practice. This was accomplished by Mead Johnson & Company, under the direction of their president, and for this the organized profession will ever hold him in grateful memory.

CHARLES L. HATHAWAY

In the death on March 25th, of Dr. Charles L. Hathaway, of Winslow, Arizona, one of the few remaining pioneer medical practitioners of northern Arizona passed away. Dr. Hathaway was born in 1872, graduated from the Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, in 1902, locating in Arizona the following year. He has practised continuously in northern Arizona for thirty years or more. He was one of the charter members of the Navajo-Apache County Medical Society.

Dr. and Mrs. Robert B. Homan, of El Paso, announce the forthcoming marriage of their daughter, Mary Virginia Homan, to Dr. Allen Clay Gwinn, Jr., to occur on April 25th in El Paso.

THE EL PASO COUNTY MEDICAL SOCIETY

(Reported by Leslie M. Smith, M. D., Secretary)

February 26, 1934

Para-urethral Ducts: Their Relation to Gonorrhea. W. R. Curtis, M. D., El Paso, Texas.

Case Report: Cardio-spasm. E. J. Cummins, M. D., El Paso, Texas.

Case Report: Adenoma of Ampulla of Vater. J. Mott Rawlings, M. D., El Paso, Texas.

The El Paso County Medical Society met February 26, 1934, at Hotel Hussmann at 8 p. m.; the meeting was called to order by Dr. E. W. Rheinheimer.

Para-urethral Ducts in Their Relation to Gonorrheal Urethritis, was given by Dr. Curtis. The paper emphasized the importance of para-urethral infection as a focus for chronicity of a gonorrheal urethritis. The paper was discussed by Dr. Strong.

Dr. E. J. Cummins gave a Case Report: Cardio-spasm. The definition, etiology, and symptomatology of the condition were outlined in Dr. Cummins' paper. In discussing the treatment of the condition, the Russel Plumber dilator was exhibited by Dr. Cummins to the society. In the case reported, one dilation was sufficient to completely relieve the patient of symptoms. The discussion was opened by Dr. Gorman and was further discussed by Dr. Vandevere and Dr. Strong.

Dr. J. Mott Rawlings gave an interesting Case Report of Adenoma of Ampulla of Vater. The case was discussed by Doctors Lynch, Rigney and Gorman.

Doctors Y. M. Milam of Fabens, M. L. Alexander of Canutillo, and G. F. Brooks of Ysleta, were elected to membership.

Communication was read from the El Paso Times asking the society to donate $50.00 to help defray expenses of getting out a paper (5,000 copies) containing, in the rotogravure section, pictures of the campus of the College of Mines. The communication stated that the Times did not intend to make any money on the publication but that the College of Mines would benefit by sending out the papers to advertise the school. The question was discussed by Doctors Vandevere, Prentiss, Waite, McCamant, George Turner, and Rigney. It was moved by Dr. Cummins and seconded by Dr. Waite that the society give the $50.00. The motion was carried.

The society adjourned at 10 p. m.

March 12, 1934

Program: Symposium on Cancer of Cervix and Uterus.

Discussion of Surgical Aspects: James Vance, M. D., El Paso, Texas.

Discussion of Radio Therapy: J. W. Cathcart, M. D., El Paso, Texas.

Discussion of Pathological Aspect: W. W. Waite, M. D., El Paso Texas.

The El Paso County Medical Society met March 12, 1934, at 8 p. m. at Hotel Hussmann.

Dr. James Vance stated that surgery has little place in cancer of the cervix and uterus. In early cases radium and deep x-ray offer the best hope. Late cases are hopeless as to cure. But radiation is the treatment of choice for palliation.

Dr. J. W. Cathcart stressed the prevention of cancer by the repair and cure of all cervical conditions. Cancer of the vulva is usually of the basal-cell type and surgery is usually the treatment of choice. In the vagina radium is the best treatment, as the mortality is high. In the cervix, 85 to 90 per cent of the cases examined are beyond the first stage.

Dr. W. W. Waite stated that cancer of the cervix is common but cancer of the body of the uterus rare. Early cases of cancer of the fundus are usually easily cured. The three types found in the cervix are: (1) squamous-cell, cauliflower-like growth which is the least malignant; (2) the flat ulcerative type which is more highly malignant; (3) adenocarcinoma.

The Canti film of the American Society for the Control of Cancer was shown and explained by Dr. L. O. Dutton.

The papers of the symposium were discussed by Doctors J. L. Green, L. O. Dutton, Paul Gallagher, Paul Rigney and, in closing, by Doctors Cathcart and Waite.

Dr. James Vance reported a case of left inguinal hernia in a boy. On operation the sac was found to contain a tough band apparently connected to the umbilicus. It was thought to be some fetal remains.

Dr. Gallagher reported a case in which the x-ray

was that of a carcinoma of the lesser curvature of the stomach. At operation a large nodular liver was found. The patient went into coma and died. The spinal fluid did not contain blood. The cause of death is unknown. The pathological report was interstitial hepatitis. No carcinoma was found.

The secretary read a letter from the State Health Officer relative to the health and sanitary improvement program being carried on through the C.W.A. Dr. T. J. McCamant stated that the health work of the C. W. A. in El Paso County has not met with any reduction. He suggested that a resolution of appreciation of the fact be sent to the relief administrator in this county. This was then put in the form of a motion, seconded, and passed. Dr. Gallagher moved that the committee on relief work handle this matter. This motion also was seconded and passed. A letter was read from the Bureau of Communicable Disease Control requesting that physicians take more pains with the examination of food handlers. Dr. F. D. Garrett stated that amebic dysentery has been on the increase. He stressed examination of food handlers with this in mind, as a means of eliminating the disease. Dr. McCamant said that the examinations given food handlers were not as thorough as they should be. He is of the opinion that these examinations should be done by private physicians and not by the health department. He reminded the society that amebic dysentery is a reportable disease. Dr. McCamant moved that the society notify the Bureau of Communicable Disease Control that El Paso physicians are taking this matter seriously and are making proper examinations.

Dr. Gallagher stated that it should not be the work of the health department to make these examinations. Dr. McCamant moved that the medical society accept the responsibility for examination of food handlers, the health department to discontinue this work. The motion was seconded and carried.

The society adjourned at 10 p. m.

Sectional Meeting of the American College of Surgeons—Arizona, New Mexico, Western Texas

(Continued from page 141)

Doctors, Patients and Hospitals: Robert Jolly Houston; President-Elect, American Hospital Association.

Good Hospital Care—Talking Motion Picture presented by Malcolm T. MacEachern, M.D., Chicago.

Saturday morning the convention was resumed by surgical clinics in both local hospitals with the following operations being performed: St. Joseph's Hospital: Intrapleural pneumolysis under novocaine anesthesia, bilateral thyroidectomy and excision of isthmus under gas anesthesia, electro-coagulation of the vulva and perineum (condyloma) under gas anesthesia, excision of cervical polyp and electro-coagulation of the cervix and cervical canal under

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gas anesthesia, hysterectomy, thoracoplasty. At At Good Samaritan Hospital: Cholecystectomy and pelvic-laparotomy under novocaine anesthesia, repair of ventral hernia under spinal anesthesia, mastoidectomy and detached retina operations and demonstrations of re-attached retina three weeks after operation.

At 9 a. m. a Hosptal Conference was held in the assembly room at Good Samaritan Hospital. Demonstrations and round table conference dealing with departmental activities and various phases of hospital standardization and administration were conducted by Dr. Malcolm T. MacEachern, assisted by Mrs. J. O. Sexson, Superintendent of the hospital, and heads of various departments. Mrs. Sexton discussed the Business Department—its methods used in meeting present financial conditions, hospital insurance schemes, collections, future plans if present economic conditions continue, and hospital costs. The Clinical Records Department was next represented by Mrs. Betty Murray, Record Librarian of Good Samaritan Hospital; she stressed the importance of convincing the physician himself of the value of complete records. Dr. S. I. Bloomhardt talked on The Hospital Records—the possibility of national standardization of records, and Dr. Robert Flinn emphasized the value of the record to the physician, comparing its value with that of the stethoscope. There was considerable general discussion concerning the problems met with in the keeping of records. The Nursing Department, organization of the various nursing units, ratio of nurses to patients, supervision of nursing service, and nursing costs, was a subject well covered by Miss Edna McDonald, R. N., Nursing Supervisor at Good Samaritan Hospital and supplemented by a short talk by Miss Christine Ballmann, R. N., Instructor of Nurses at St. Joseph's Hospital. Mrs. Adelaide Jeffries, representing the dietitian of Godd Samaritan Hospital read a paper discussing the Dietary Department, departmental control and management, food costs, and economics. Considerable discussion followed concerning the various methods of preparing food for the patient. A tour of the hospital completed the program.

From 10 to 12 a. m. the Cancer Clinic, held in the Nurses' Home of St. Joseph's Hospital, drew an interested audience of doctors and nurses. Twenty-two cases of various types of malignancies were demonstrated, in all but two the patients themselves being present. The patients were arranged in groups according to the type of malignancy they represented but were presented singly. A brief summary of each history was read by a member of the local Cancer Clinic. When practical the lesion was exhibited and examination allowed. Following this, each case, Dr. Greenough discussed the diagnostic possibilities, and the indications and contraindications for treatment of them. The cases represented malignancies of the bladder, testis, prostate, femur,

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Medical Director

maxilla, tibia, jaw, tongue, face, eye, lip, uterus, cervix, breast, ovary, and skin. There were papillary carcinoma, teratomas, embryonal carcinomas, sarcomas, epitheliomas, etc. There were treated, untreated, early, moderately advanced, advanced, hopeless, and cured cases.

Medical motion pictures were shown from 12:00 to 2 p. m. at the Hotel Westward Ho and consisted of the following:

Simple Goiter (1 reel, silent): George W. Crile, M. D., Cleveland, Director of Cleveland Clinic Foundation.

Subtotal Abdominal Hysterectomy for Uterine Fibroids (2 reels,sound): Harold O. Jones, M. D., Chicago, Associate Professor Gynecology, Northwestern University Medical School.

Prolapse of the Uterus (2 reels, sound): Philemon E. Truesdale, M. D., Fall River, Mass., Surgeon Truesdale Hospital.

Normal Labor (3 reels, silent): Joseph B. DeLee, M. D., Chicago, Professor Obstetrics and of Gynecology, Chicago University Medical School.

Saturday afternoon, at St. Joseph's Hospital, a program somewhat similar to the one held at the Good Samaritan Hospital in the morning, was held, varying in the respect that a different group of departments were represented bringing in different types of problems. Dr. MacEachern conducted the program. The Obstetrical Department was represented by Mrs. Roberta Rumble, R. N., Supervisor of Maternity who discussed the organization and management and procedure with patient in labor, morbidities, etc. Miss Lula Crockett, R. N., Assistant Supervisor of Surgery, read a very complete summary of the supervision, standardization of routine procedures, sterilization, anesthesia, control of surgery, records, costs and charges of the Surgical Department of St. Joseph's Hospital. The Central Supply Room, its location, organization, functions, and advantages were demonstrated in a brief written and an informal oral discussion by Miss Gertrude Kleinheinz, R. N., Senior Nurse in charge of St. Joseph Hospital central supply room. Exhibition of sample intravenous, hypodermoclysis, dressing trays, etc., lent a practical atmosphere to her discussion. The Clinical Laboratory, its location, supervision, personnel, routine examinations, records and reports, costs and charges were explained in a very complete outline by Miss Laura F. Celaya, R. N., Clinical Laboratory Technician of St. Joseph's Hospital. Mr. Paul Duffy, x-ray technician of St. Joseph's Hospital, spoke on Fracture Service, its organization facilities, and records. As an interesting finale to the program a talking motion picture entitled Good Hospital Care and a silent motion picture illustrating the Mechanism of the Heart Beat and Electrocardiography were presented by Dr. MacEachern.

The Saturday afternoon scientific session combined the announced General Surgical Section and the Eye, Ear, Nose and Throat Section,, ,and the following program was presented:

The Cervical Rib Syndrome, With and Without Cervical Ribs: Howard C. Naffziger, M. D., San Francisco; Professor of Surgery, University of California Medical School.

Transurehtral Prostatic Resection: David M. Davis, M. D., Phoenix.

Results in the Treatment of Carcinoma of the Breast: Thomas M. Joyce, M. D., Portland; Associate Clinical Professor of Surgery, University of Oregon Medical School.

Retinal Detachment: the Newer Developments in Surgical Procedures: D. F. Harbridge, M. D., Phoenix, Arizona.

Chest Surgery and the General Surgeon: Chas. A. Dukes, M. D., Oakland, California.

Results of Intrapleural Pneumolysis: Victor Randolph, M. D., Phoenix, Arizona.

A dinner was served at 6:45 p. m. at the hotel and the convention was brought to a close with the following program which began at 8 p. m.:

Treatment of Cancer of the Breast: Robert B. Greenough, M. D., Boston.

Small Intestinal Tumors: Thomas M. Joyce, M.D., Portland.

Practical Consideration in the Prevention of Defects in the Skull and Their Repair: Howard C. Naffseiger, M. D., San Francisco.

Telplasms Within and Around the Eye: Edward H. Cary, M. D., Dallas, Texas.

Current Problems in Reconstruction Surgery of the Face: Gordon B. New, M. D., Rochester, N. Y.

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BOOK REVIEWS

THE 1933 YEAR BOOK OF GENERAL MEDICINE, edited by Geo. F. Dick, M. D., Professor of Medicine, University of Chicago; Attending Physician Billings Memorial Hospital; Lawrason Brown, M.D., Chairman of Medical Board, Trudeau Sanatorium, Saranac Lake, New York; Geo. R. Minot, M. D., S. D. Professor of Medicine, Harvard University; Director, Thorndike Memorial Laboratory, Boston City Hospital and Wm. B. Castle, M. D., Associate Professor of Medicine, Harvard University Associate Director Thorndike Memorial Laboratory Boston City Hospital; Wm. D. Stroud, M.D., Professor of Cardiology Graduate School of Medicine, University of Pennsylvania; Geo. B. Eusterman, M.D., Chief of Section in Medicine, Mayo Clniic; Chief of Gastro-Enterologic Clinic; Associate Professor of Medicine, University of Minnesota (Mayo Foundation); The Year Book Publishers, Inc., Chicago, Ill.

For every physician who does general medicine and especially for internists this handy volume is almost indispensible; this statement is predicated upon the thought of up-to-dateness being a prime necessity and desire of every physician.

Suppose for example that one has a case of secondary anemia (hypochromic anemia seems to be a preferable term) who is not doing well. By a few minutes reading in this volume one may find abstracts of various papers and learn that many cases require as much as six grams of iron and ammonium citrate by mouth per day before good results are obtanied. The ordinary intravenous administration of iron products is inadequate as a rule only because the dosage is inadequate.

Or suppose one has been asked to open a discussion dealing with hypertension. In this book will be found abstracted articles written during 1933, on the subject.

There is no end to the wealth of material in the book. It is good for a week or a month's reading and is equivalent to a three months post-graduate course.

O. H. B.

Histeen.— "Histeen" is a newcomer in the "patent medicine" field. It is put on the market by the Histeen Corporation of Chicago. According to the state records Joseph B. Creevy is the president of the concern and also one of the three directors. The Histeen advertising declares that hay-fever and pollen asthma are due to histamine poisoning and that Histeen is a compound which 'acts to counteract histamine poisons, neutralize its action and release the irritating effect of histamine." From an analysis made in the A.M.A. Chemical Laboratory it seems that this "amazing new direct relief" has for its chief ingredient, making up nearly 60 per cent of Histeen, antipyrine, which has been used by physicians for nearly fifty years and has been prescribed for the purpose of giving symptomatic relief in certain forms of asthma and hay fever for almost as long. In addition it cointains phenobarbital (Luminal), as well as ephedrine, a substance that enters into an enormous number of proprietary remedies for the symptomatic relief of hay-fever and asthma. And this mixture of well known drugs is claimed to be the alleged discovery of a "Chicago specialist" who will not allow his name to be used because he is afraid of hurting his 'ethical standing!" The statement is made that three tablets four times a day may be "taken with perfect safety as long as required." Obviously, from the analytical work done, the person who takes Histeen gets 4 grains of antipyrine with each tablet, and where he takes three tablets four times a day he has a daily intake of 48 grains of antipyrine! He also gets in the same period about 2½ grains of phenobarbital and about 1½ grains of ephedrine. Summed up then, it seems that, essentially, Histeen is a secret mixture of three well-known drugs ,all of them potentially dangerous in the hands of the untrained. Further, the nostrum is recommended in dosages that a physician with any regard for his patient's safety and his own reputation would hesitate to prescribe. (Jour. A.M.A., October 14, 1933, p. 1251).

TREATMENT IN GENERAL PRACTICE: By Harry Beckman, M. D., Professor of Pharmocology at Marquette University, School of Medicine, Milwaukee, Wis. Second Edition, Revised and Entirely Reset. 889 pages. W. B. Saunders & Co., Philadelphia and London, 1934. Cloth, $10.00 net.

The publishers of this volume state that the first edition broke all records for sales of a book of this kind. The new second edition was entirely re-written, and contains hundreds of new and approved treatments.

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The American Medical Golfing Association will hold its twentieth annual tournament at the Mayfield Country Club in Cleveland on Monday, June 11, 1934.

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Dr. Homer K. Nicoll of Chicago is president and Dr. Charles Lukens of Toledo and Dr. John W. Powers of Milwaukee are vice presidents of the American Medical Golfing Association, which was organized in 1915 by Dr. Will Walter. Dr. Wendell Phillips and Dr. Gene Lewis, and now totals 1,100 members representing every state in the union. The living past presidents include Dr. Wendell Phillips of New York, Dr. Thomas Hubbard of Toledo, Dr. Fred Bailey of St. Louis, Dr. Edward Martin of Philadelphia, Dr. Robert Moss of San Antonio, Dr. Charlton Wallace of New York, Dr. Will Walter of Chicago and Charlottesville, Va., Dr. James Eaves of San Francisco, Dr. Chester Brown of Danbury, Conn., Dr. Samuel Childs of Denver, Dr. W. D. Sheiden of Rochester, Minn., Dr. Walter Schaller of San Francisco, Dr. Edwin Zabriskie of New York, Dr. Frank Kelly of Detroit and Dr. John Welsh Croskey, Philadelphia.

Cleveland Committee

The Cleveland Committee is under the chairmanship of Dr. John B. Morgan, 1301 Medical Arts Building, Cleveland, Ohio. He will be assisted by Drs. R. H. Birge, A. V. Boysen, E. F. Freedman, F. T. Gallagher, Secord Large, E. P. McNamee, J. J. Marek, Theodore Miller, U. V. Portman and M. A. Thomas.

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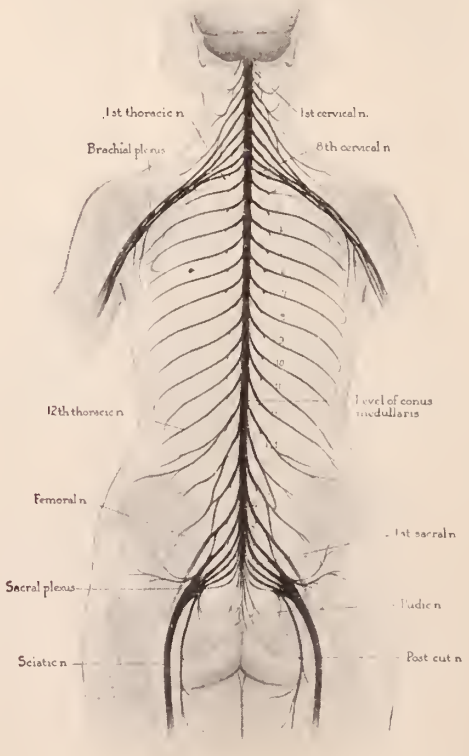

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VOL. XVIII. MAY, 1934 No. 5

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TRANSURETHRAL PROSTATIC RESECTION—REPORT OF FIFTY CASES.

DAVID M. DAVIS, M. D.
Phoenix, Arizona.

(Read before the Sectional Meeting of the College of Surgeons, held in Phoenix, March 16 and 17, 1934.)

In the past seven years transurethral prostatic resection has been developed and perfected, and in the last three years has swept over the entire country and become almost the exclusive topic of conversation wherever urologists are gathered together. At first confined to contractures, median bars, and small median lobes, improved methods and greater skill on the part of operators have now allowed very large adenomatous prostates to be successfully attacked in this manner. In this developmental period, many mistakes have been made, leading to not a few unnecessary fatalities, so that opinion in the medical profession is still somewhat divided as to the desirability of the new method.

While my experience with the punch instrument of Young—really the pioneer instrument in this field—dates back to 1921, I wish to discuss today only what has befallen since the adoption of the newer instruments in April, 1932. My work has been done with a McCarthy loop resector, utilizing a spark-gap cutting current obtained from a Davis-Bovie apparatus. For some time I confined my efforts to median bars and contractures of the vesical orifice, but with increasing experience I have operated upon larger and larger hypertrophies, finding it possible to remove tissue satisfactorily not only from the median region and vesical orifice, but also from the lateral lobes right down to the apex of the prostate.

The material I wish to present consists of fifty-one cases, upon which fifty-four operations were performed. There is not time to give the details of each case, but I shall try to summarize them so as to give a correct picture of what has happened. There were thirty cases of benign prostatic hypertrophy. In every case the symptoms of urinary obstruction were present. The enlargements varied from small to very large. The prostatic enlargement was complicated by diverticula of the bladder in one case, tabes dorsalis in one case, stone in the bladder in two cases, and stricture of the urethra in two cases. There were seventeen cases of median bar and contracture of the vesical orifice, without real adenomatous hypertrophy. In nine of these cases operation was performed for urinary obstruction alone; in the other eight, obstruction of various degrees was present, but the predominating symptoms were those of chronic prostatic infection. I discussed these cases at a meeting of The American Urological Association in Chicago last June.* The median-bar and contracture cases were further complicated by urethral stricture in two cases, tuberculosis of the prostate in two cases, polyposis of the urethra in one case, stone in the bladder in one case, and extensive papilloma of the bladder in one case. There were three cases of carcinoma of the prostate, with severe urinary obstruction in each case. Finally, there was one case of urinary obstruction due to extensive papilloma of the bladder growing directly into the vesical orifice, and which was removed by resection, just as a prostatic growth would have been.

The ages of the patients with benign prostatic hypertrophy varied from 45 to 91. (Table

*Jour. Urol., 1933, XXX (Nov.), 579-592.

TABLE I.

B. P. H.		Age	M. B. & C. V.	
45-55 yrs.	7		20-30 yrs.	1
56-65 yrs.	10		31-40 yrs.	4
66-75 yrs.	11		41-50 yrs.	6
76-85 yrs.	1		51-60 yrs.	4
86-95 yrs.	1		61-70 yrs.	1
			71-80 yrs.	1

I.) There were seven between 45 and 55; ten between 56 and 65; eleven between 66 and 75; one between 76 and 85, and one over 86. The three carcinoma cases were aged 60, 70 and 75. The bar and contracture cases varied from 27 to 72. There were one between 20 and 30; four between 31 and 40; six between 41 and 50; four between 51 and 60; one between 61 and 70; and one between 71 and 80.

The symptoms of which the patients complained had been present from 6 months to 20 years, the average period being 6.65 years.

The most common symptom was frequency of urination. It was present in every case but two, and in thirty-five cases it was the initial symptom. Pain was the initial symptom in eight cases, difficulty of urination in five. Incontinence was present in three cases: one of simple hypertrophy, one of hypertrophy complicated by tabes dorsalis, and one of papilloma of the bladder. In all three cases, the incontinence disappeared after operation.

As many of the cases were prepared for operation by gradual decompression of the bladder, the residual urine was not determined in eighteen of the cases. Nine cases had complete retention when first seen. Of the others, the residual urine was less than 10 cc. in seven, 10 to 50 cc. in six, 50 to 100 cc. in six, 100 to 200 cc. in three, 200 to 300 cc. in one, and 400 cc. in one. (Table II.)

TABLE II.

Resid. Urine		Renal Func.		
0-10	c.c.	7	35%	27
10-50	c.c.	6	under 35%	16
50-100	c.c.	6	under 20%	10
100-200	c.c.	3	under 10%	5
200-300	c.c	1	in ½ hour.	
400	c.c.	1		

The kidney function was determined by the phenolsulphone-phthalein test in forty-three cases. In twenty-seven cases it was 35 per cent or more in the first half hour, which was considered normal. Sixteen cases were under 35 per cent, ten cases under 20 per cent, and five cases under 10 per cent. Of the cases with low phthalein, eight improved under preliminary treatment 10 per cent or more, while seven improved either not at all or less than 10 per cent. Two cases are of particular interest, as they showed no more than 1 or 2 per cent excretion in half an hour even after prolonged drainage. In spite of this, both were operated upon, and both did very well. In general, it is safe to operate after the phthalein is stabilized, even if low.

In twenty-two cases the urine was not infected, while in the other twenty-nine varying degrees of infection were present.

TABLE III.
PREPARATORY TREATMENT

Treatment 32	None	22
	Retention cath.	29
	S - P drain	2
	Interval cath.	1

From 1 to 71 days,
Average 14 75 days.

Preparatory treatment was carried out before thirty-two of the operations (Table III) by retention catheter before twenty-nine, by suprapubic tube drainage before two, and by interval catheterization before one. The two operations preceded by suprapubic drainage were in the same patient, and the insertion of the tube was preceded by 21 days of retention catheter drainage. This patient was in very poor condition and the tube was inserted to enable him to go home and recuperate before operation. I may say that he is now perfectly well.

For the operation, I use transsacral anesthesia, which, with preliminary medication, is very satisfactory.

The actual performance of the operation requires complete familiarity with the anatomy of the bladder, vesical orifice, and prostatic urethra, and with the instruments and attachments used. Unremitting attention to every detail is the price of success, and the operator's patience must be inexhaustible. The removal of tissue must proceed according to a definite plan. Before each cut, any bleeding caused by a previous cut must be stopped sufficiently that a clear view can be obtained. This is the first and great commandment, because the loop will cut anything it touches. Blind cuts may pass through the bladder wall or even into the rectum, and have been the cause of many of the fatal mistakes already mentioned. Familiarity with the method is required in order to make the decision as to when sufficient tissue has been removed. This really is the vital point of the whole procedure and there is no formula to follow—only experience can teach. All arterial bleeding must be arrested at the close of the operation.

The tissue removed at operation varies greatly in the amount. The specimens weigh from 0.5 gm. to 14.0 gm. With the rather deliberate technic I have employed, I have not removed the huge amounts at one sitting reported by some other operators. Of the bladder stones, one was removed by an alligator forceps through the panendoscope, the other two were crushed with the lithotrite.

In three patients two operations were required. Two of these patients are perfectly well, the other nearly so, but may require a third operation in the future.

TABLE IV.
POST-OPERATIVE DRAINAGE
From 1 to 13 days, Ave. 2.6 days
More than 4 days - 7 cases

POST-OPERATIVE FEVER

None	30
Nor - 101°	9
101° - 102°	8
Over 102°	8

HOSPITAL STAY
Min. 1 Max. 17 Ave. 4.6 days
3 days or less - 27 cases.

Following the operation, catheter drainage was supplied in all but two cases for periods varying from 1 to 13 days. (Table IV.) This includes four cases in which the catheter had to be re-inserted for a few days to allow post-operative edema to subside. The average period of postoperative drainage was 2.6 days; in nineteen cases it was over 2 days; in seven cases only was it over 4 days. It is my tendency now to make this period shorter and shorter.

Not one of the patients can be said to have been seriously ill after the operation. Thirty had no fever at all. Of the twenty-five having fever after operation, in nine it remained under 101 degrees. In sixteen it was 101 degrees or over, but in only eight was it 102 degrees or over. The fever lasted usually only 2 or 3 days; in a few cases as much as a week or 10 days.

Only three hemorrhages occurred. Two of these were slight, one on the 24th day after operation, one on the 10th day. The third was moderately severe, and came on the 4th day after operation. All three were immediately arrested by electro-coagulation through the pan-endoscope, without difficulty, and did not recur.

There was no other complication except one case of popliteal thrombosis, which kept the patient in bed for three weeks.

The stay in hospital after operation varied from 1 to 17 days. The average was 4.6 days, and only seven patients remained there longer than 1 week. Twenty-seven patients left in 3 days or less.

TABLE V.
RESULTS

Well - - - -	16
95-100% well - -	31—67%
90-100% well - -	36—79%

DEATHS
None
INCONTINENCE
None

TABLE VI.
RESULTS

B. P. H.		Bar & Contr.	
Well -	12—44.4%	Well -	4—26.6%
95% -	20—74.1%	95% -	10—66.6%
90% -	22—81.5%	90% -	14—93.3%
Poorest -	60%	Poorest -	80%

I have attempted to evaluate the results as percentages (Tables V. and VI.), and my estimate shows sixteen patients entirely well as regards the urinary tract, twenty-three patients 98 per cent improved or better, thirty-one patients 95 per cent improved or better. Excluding five recent cases, this gives 67.4 per cent of the patients 95 to 100 per cent improved and thirty-six, or 78.4 per cent, 90 per cent improved or better. Considering the cases of benign hypertrophy of the prostate separately, and excluding three recent cases, there are twelve cases, or 44.4 per cent, entirely well, twenty cases, or 74.1 per cent, 95 per cent improved or better, twenty-two cases, or 81.5 per cent, 90 per cent improved or better. The poorest case in the series is adjudged 60 per cent improved.

The bar and contracture cases, excluding those complicated by tuberculosis, show 66⅔ per cent 95 per cent improved or better, and 93.33 per cent 90 per cent improved or better. The poorest case in the series is adjudged 80 per cent improved. Many of these cases are entirely well except for slight frequency or infection due to trabeculated bladders with cellules, which is no fault of the operation. The only complete failure was in a case of carcinoma of the prostate. In this case a punch operation was done first, followed later by resection with very complete clearing of the vesical orifice and prostatic urethra. Retention recurred, and proved to be due to carcinomatous involvement of the membranous urethra, with stricture formation. This could not have been prevented by any other type of opera-

tion. Another patient had a good result as far as his prostate was concerned, but left the city and allowed his urethral stricture to recontract. In one patient with tuberculosis of the prostate, the residual urine has been reduced from 150 cc. to 25 cc., with concomitant general improvement, but cannot be classed as a perfect result. Most of the other imperfect results are due to insufficient removal of tissue, and most of these date back to my less experienced days. The patients feel well enough, and so much improved over their former condition that they see no reason at present for submitting to a second operation.

There has been no death in this series, and no untoward postoperative complication. There is no case of postoperative incontinence. The oldest patient, aged 91, who also had severe myocarditis and had to be constantly digitalized, caught cold ten days after the operation and developed bronchopneumonia, but made a good recovery and is still living a year later. This well illustrates the benign character of this type of operation.

In considering the value of this operation, one must remember that the preparatory period of drainage in cases needing it, is exactly the same as with any other type of operation. From there on, however, the advantages of resection to the patient are so great as to be overwhelming. In the first place, the operation, in competent and careful hands, is extremely safe. When I say careful hands, I mean hands willing to leave a little tissue rather than run the risk of cutting too deep, and guided by eyes that see clearly at every stage of the operation. In the second place, all danger of postoperative fistula and postoperative hernia is avoided, and the operation can never cause sexual impotence. In the third place, the period of hospitalization, with its attendant expense, is reduced almost to the vanishing point. I might say that these considerations make it justifiable to advise operation in a good many early cases where we might hesitate to recommend prostatectomy.

The other side of the shield is that very large prostates may require two or three sittings. Here the advantage of resection as a time-saver largely disappears, but it still has its appeal in its safety, and in the fact that the patient is up and about during the treatment, instead of in bed with a draining incision. At any rate, we cannot ignore the fact that many of the most competent urologists are finding fewer and fewer occasions to do prostatectomy. Kretschmer of Chicago has not performed prostatectomy for over a year, and at the Mayo Clinic not more than 1 or 2 per cent of the prostatic cases are now subjected to prostatectomy. I have performed only two prostatectomies since beginning resection. Both of these were very large glands and both had very satisfactory results. There will always be some cases which will be best treated by prostatectomy, but their number seems to be decreasing every year. I do not wish to appear as an enthusiast, and have, therefore, placed my experience before you, from which you must draw your own conclusions.

I wish to express my appreciation to Dr. John W. Pennington, who has assisted me in most of these operations and performed a few of them himself under my direction.

TRAUMATIC NEUROSIS

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(Read before the Maricopa County Medical Society, Phoenix, Arizona.)

Traumatic neurosis is not a definite entity, but includes the varying manifestations of nervous symptoms following injuries in which no organic lesion of the brain or nervous system can be found. It may embrace all the symptoms of: neurasthenia, psychasthenia, hysteria, localized tics and tremors, localized muscle spasm, epileptiform seizures, psychotic symptoms and resultant mental complexes.

The conception of traumatic neurosis is that it is of functional origin and distinguished from the often somewhat similar symptoms resulting from organic or structural changes in the central nervous system, as in general paresis, tabes dorsalis, and various injuries to nerve structures. There are certain symptoms common to all of these indefinite nervous conditions; they are headaches, dizziness, sleeplessness, buzzing in the ears, general weakness, apathetic look, fine tremors, increased reflexes, and apprehension. Grave physical injury may be accompanied by severe mental or nerv-

ous disorders; more often trivial injuries, or even non-physical injuries, are followed by nervous disorders.

In military life during the Great War it was found that many cases of neurosis developed as the result of fear of battle and the desire for compensation after service. It is recorded that among the prisoners in the German camps, where these two elements were eliminated, there were practically no cases of neurosis. In civil and industrial life we have the corresponding elements of fright sustained in the accident and the desire for damages and compensation following the accident.

Causes of neurosis may be considered under the headings of: physical injury; mental fright; inferior mental makeup; desire for compensation; some unpleasant circumstance surrounding the accident; thoughts of neglect (1) on the part of the employer in providing adequate protection to workmen, (2) on account of the insurance carrier not providing sufficient compensation, (3) on account of the hospital and professional attendants in not providing adequate treatment.

In determining the cause of a given case of neurosis, it is important to know whether the neurosis existed previous to the accident, whether it is directly resultant from the accident and injury, or whether it is resultant from some other cause subsequent to the accident.

SYMPTOMS

The symptoms of traumatic neurosis are practically identical in all cases except for minor variations applying to the individual.

1. In psychasthenia—including mental depression, hypochondriasis, irritability and emotional and anxiety states—the anxious facies is usually present and consists of a strained and startled expression, with widening palpebral fissures and often dilation of the pupils. The typical speech is hesitant but not definitely stammering. Tremors, palpitation of the heart, excessive perspiration, sleeplessness, and vertigo, are usually present. While dizziness is complained of, the patient does not fall. The faculty of attention is usually diminished and results in defects of memory, especially relating to detailed circumstances following the injury. There is an inability to concentrate.

2. Sensory symptoms: Headaches, burning paresthesias, hyperesthesias and anesthesias usually in the lumbar or spinal region. Hysterical anesthesias of the various parts of the body may seem complete; they never, however, lead to burns or other injuries such as are sustained in anesthesias from definite nerve lesions, nor do they prevent delicate movements when in the hand and fingers. Pain may be present in any part of the body and is very diversified in character and shifting in location; many other strange and queer feelings will be described in the individual case, mostly relating to the head, neck and back.

3. Special senses: Loss of smell is common, especially after head and nose injuries; in the eyes, it is often a contraction of the visual field; in the ears, the hearing may be increased or diminished—usually in both ears.

4. Visceral symptoms: occasionally in the bladder—such as frequent urination or burning; genital functions are often diminished or entirely abolished.

5. Motor symptoms have paralysis, contractures and tremors of various kinds and locations. Torticollis, or wryneck, is often present. Hysterical paralysis of the limb may be flaccid or spastic; hysterical spasms with definite curvatures are often present.

Under vasomotor disturbances are head pains, vertigo, intolerance. There is also hypersensitiveness of special senses, disturbance of the aural canals and decreasing ability to comprehend and retain ideas.

6. Emotional symptoms: instability, tachycardia, hyperidrosis, dizziness, dyspepsia, and nocturnal fright. Fright neurosis rarely occurs in seriously injured persons; the physical injury seems to act as a blanket on the emotional reaction. It is usually the patient who is but little hurt and has the opportunity of seeing those who are, who develops a neurosis; repeated telling of the accident and calling attention to some localized minor injury gradually brings on varied symptoms.

In certain countries of Europe, more-or-less uniform methods of evaluating and compensating cases of traumatic neurosis have been developed. For instance, in England, Sweden, Denmark, and Canada, a settlement has been made of the capital or one-payment plan, with the idea that, in the final and permanent settlement of all claims and litigation, the element of desire has been eliminated and the

patient will have the opportuntiy of readjusting himself during the period of compensation. In other countries—Germany, Austria, Italy, and Sweden—these cases are settled on a small monthly payment plan, the compensation to continue over such a period as may be necessary for the patient to become readjusted. In various states in the United States, both methods are used. While capital settlement is less advantageous for the permanently disabled workman, it has resulted in more uniform recovery in temporarily disabled neurotic patients. In the settlement of these cases the statutes in the various states do not seem to make specific provision—it is usually left to the referees or commissioners. It is found that the awards vary from nothing to 100 per cent for the same type of case—not only in different states but in the same state.

A uniformity of action is desirable—not only for the benefit of the sufferer from traumatic neurosis, but also because of the injustice which is being done to sufferers from real physical disabilities.

CLASSIFICATION

With few variations, these conditions are almost always the same. As a basis of classifying and evaluating traumatic neuroses, the following is suggested:

1. A desire, or compensation, neurosis developing following minor injuries and evidently caused by a desire for compensation plus the other elements of neglect which gradually bring on these conditions.

2. Functional neurosis resulting from the frightening or other circumstances surrounding the injury itself; these are considered true traumatic neuroses.

3. Neurosis due to unexplained complexes or mental conflicts in the individual. .

Since it is impossible to differentiate between the three groups in the early months, the symptoms being the same, the management and award should be uniform in all cases. Temporary disability in all classes should rate a maximum of six months where there is no severe physical injury. When the neurosis is superimposed on a severe injury, such as a fractured spine, the temporary disability should be extended six months beyond the normal time for the recovery from the physical injury; during this period it is assumed that the patient will adjust himself, with or without medical aid. If, at the end of the temporary disability period, neurosis is still present and causing disability, a permanent disability award, equivalent to one year of compensation, is paid in a lump sum for the following reasons:

1. In the first class of cases the lump sum award should satisfy the neurotic and, hence, eliminate the cause of his neurosis.

2. In the true traumatic neurotic—the second class—the desire factor has been eliminated and he has a year in which to make mental and nervous adjustments.

3. In the third group, with mental conflicts not related to the accident, such an award is more than the case is entitled to from an industrial standpoint and, in any event, the amount involved is not so large that it penalizes those suffering from real injury and disability.

If the neurosis persists in the same form one year after date of permanent award, no additional award is made—it being assumed that cases of classes one and two would have recovered and that any residual neurosis is due to some mental conflict not connected with the accident and, hence, not influenced by the termination of the litigation.

CLINICAL INDICATIONS FOR BLOOD TRANSFUSIONS.

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(Read at the Staff Meeting of St. Joseph's Hospital, Phoenix, February 12, 1934.)

Today the transfusion of blood to patients in need of such therapy, rests upon a sane and comparatively safe basis, and in many cases is life-saving. It will be the attempt of this paper to treat this subject on a rather broad basis, perhaps without enumerating each and every specific disease in which this procedure might be useful.

Someone suggested, a few years ago, that the indications for giving a patient blood rest upon the necessity of restoring lost or impaired body tissue (considering the blood as a tissue) by a homologous transplant from one person to another, so that one might, in a broad

sense, consider transfusions as necessary in most pathological conditions which alter the quality and quantity of the blood to such an extent that it is unfit to fulfil its physiological duties.

Investigations and experience have shown that blood transfusions tend to meet the needs of a number of conditions that arise during different types of illnesses, and at this point we shall review some of these needs. Transfusions tend to restore the quantity of the circulating fluids—an obvious fact, and its value in certain circumstances along this line is beyond discussion. The indications for restoring volume can be judged best on clinical grounds, on the signs and symptoms of collapse and shock after hemorrhage. Unfortunately, to date there is no rapid method available for the measurement of blood bulk, but in addition to the clinical signs and symptoms, and estimation of blood pressure, red-cell count and hemoglobin determinations will help in a decision. However, after hemorrhage, experience shows that a decision on clinical grounds alone is not, usually, a great difficulty, so that the importance of restoration of blood bulk by transfusion arises in practically all severe acute conditions of rapid hemorrhage.

Blood transfusions provide oxygen for the tissues and materials for the special functions of the blood. This effect, consequently, is of importance, not only in cases of acute hemorrhage, but also in many cases of chronic anemia, no matter what the cause. It is sometimes difficult to know just when to transfuse in conditions producing chronic anemia, but I think it is well to set an arbitrary figure, especially where surgery is indicated. One can arbitrarily set the figure of 3,500,000 red cells as perhaps a dividing line between transfusion and no transfusion, feeling that transfusion should be done in cases where the figure is below that amount, and contemplate a transfusion in a patient who is going to have surgery. This method of treatment will help get a surgical case in better general condition, it will lessen the operative risk and shock, and will speed up recovery. It will help to combat shock from blood loss during an operation.

Another effect of blood transfusions may be to increase the blood coagulability, and indications for this procedure arise with certain types of diseases. However, let me say at the outset that there is no substantial proof that transfusions have an appreciable effect on the coagulability of the blood, but, as I shall attempt to show, this fact should not cause us to cease to use them when the need arises. One cannot say that hemorrhage or anemia has any influence on coagulation of blood or the coagulation time, and we cannot expect transfusions to change this fact. Recent evidence points to the existence of some factor or factors disposing toward the occurrence of hemorrhage from some site, these factors being perhaps unknown at the present time. These factors may influence the spontaneous development of hemorrhage from some site, and in this connection I am thinking of many of the rare types of blood dyscrasias, hemorrhagic diathesis, and primary purpuras, which are occasionally seen, little understood, and difficult to cure.

This unknown factor or these factors are independent of coagulation time, the number of platelets, the bleeding time, or the capillary permeability; but they may well be associated in some way with the amount of fibrinogen in the blood, and the softness of a blood clot formed. Transfusions of blood in this connection must add to the proportion of fibrinogen present in any clot formed subsequent to the injection. The bleeding-time test is a valuable test in certain of these forms of hemorrhagic diathesis, indicating, as it does, the existence at the moment of the tendency to spontaneous hemorrhage. It does not appear to be related in any way to the blood pressure or to the degree of anemia. The bleeding time is found to be normal in many active hemophiliacs. The increase in the number of blood platelets after transfusion agrees with the bulk of the blood injected; but the platelets in anemia rarely fall to a level which can influence the occurrence of clotting or hemorrhage, except in special forms of hemorrhagic diathesis and severe toxemia, and conditions in which spontaneous hemorrhage occurs. So, even with the knowledge that transfusions of blood many times do nothing to alter the ability of the blood to coagulate, it must be remembered that the active hemorrhagic state in a patient, when there is a tendency to bleed spontaneously or after a trivial injury, may cease as suddenly as it undoubtedly commences. Consequently these patients must be kept alive as long as possible.

as spontaneous cure may take place at any moment. The effect of blood transfusion in adding blood to the circulation in these cases is thus of value, and is indicated in all acute cases. Even in hemophilia, investigators agree that the coagulation time in active hemophilia is temporarily shortened by transfusion, with, many times, the checking of hemorrhage. This effect, however, is transitory, but may be sufficient to arrest an alarming hemorrhage.

Again, transfusions are useful for stimulating the hematopoietic organs, or to give them a rest, as the case might be. We all know that, when there is an excessive call upon the reparative functions of an organ, that organ may give up the attempt to respond. It is rather that it conserves its powers for a more suitable opportunity, instead of wasting its strength in doing what is not enough to be effective. In regard to the blood, this fact is well illustrated by what occurs in the restoration of the bulk of fluid after an acute hemorrhage. It may be said that the loss of 25 per cent of the fluid is rapidly repaired. In the loss of 50 per cent there is little attempt at restoration; but if 25 per cent of the volume is added, the reparative processes come into play to replace the remaining 25 per cent. The same principle applies to the hemoglobin and the red cells, that is, the hematopoietic tissue, and it must be remembered that the hematopoietic tissues themselves must be nourished with blood. So, again, we are confronted with an indication for blood transfusion, in each and all cases where the hemoglobin or red cells, or both, are too low. Certainly, in chronic anemia from any cause, it is advisable to transfuse if the hemoglobin is below 25 per cent. In more recent years, a more liberal view is being adopted, so that individuals with anemias with between 25 and 50 per cent hemoglobin, can be saved much chronic debility and ill health by an initial transfusion.

Blood transfusions can be relied upon to help restore blood pressure, but a low pressure is due to hemorrhage. Let it be said that transfusions serve no particularly useful purpose when given for postoperative or other types of shock when blood loss itself has not been a factor. The beneficial effect from a rise in blood pressure in collapse after hemorrhage, need not be discussed here, but it has been suggested that the use of transfusions to raise blood pressure in such conditions as a bleeding gastric ulcer might increase the tendency to further hemorrhage or displace an unstable blood clot. The blood in these cases no doubt will be unduly soft, and the transfusions may not affect the coagulation time. Consequently, it cannot be denied that a blood transfusion will tend to place an increased strain on the blood clot at the site of the hemorrhage. Any further clot formed will, however, be of greater stability, and it is the general impression that recurrence of hemorrhage does not occur with greater frequency after transfusion in such circumstances. Recovery from collapse due to hemorrhage necessarily involves a rise in blood pressure, whatever the line of treatment, whether it be heart stimulants, intravenous glucose or saline, or whatnot; so the argument against transfusions is not very strong.

It is generally agreed that transfusions of blood are of no particular value in increasing the resistance of an individual to infection, because of antitoxin or bactericidal properties in the blood. However, with the recent new developments in the use of immuno-transfusions and convalescing blood-serum in patients suffering from such diseases as scarlet fever, anterior poliomyelitis, measles, and so forth, there is opened up an entirely new field for transfusions and serum injections. This avenue for the use of human blood offers hope for new adventures in the curing of disease. In the field of immunotransfusions, donors prepared especially by injections of specific antigens are finding use in therapeutics of certain types of infections, so that patients can receive passively immune bodies through blood transfusions. Again, in passing, indications are found from time to time for auto-transfusions, in such cases as hemorrhage into the abdomen from ruptured viscera, ectopic pregnancies, and so forth, where some of the extravasated blood can be gathered up, strained, and reinjected into the patient. This procedure is especially valuable when there has been no time to type blood or get a donor, where the need for increasing blood volume is imperative to save life.

In the field of pediatrics, blood transfusions are indispensable to good practice. In many bizaare hemorrhages of the newborn, in melena neonatorum, the intravenous and intramuscular injection of blood is invaluable, and

equally effective at times. In the hemorrhagic diathesis and primary purpuras, cessation of hemorrhage rarely follows transfusion, but this treatment must not be rejected, since the criticism of inefficiency can be applied to all other methods of treatment also. Furthermore, one occasionally is successful. It must be remembered that the active hemorrhagic state may cease as suddenly as it commenced, consequently these patients must be kept alive as long as possible. Again, transfusions are indicated in cases of inanition, malnutritions, athrepsias, and secondary anemias attending such causes as acute or chronic gastro-intestinal infections, diarrheas, and other malnutritions. Transfusions are valuable in anemias of chronic bronchitis, bronchopneumonia, pyelitis, and other debilitating complications of such diseases as scarlet fever, measles, pertussis, and the like. Also in the preoperative care of mastoiditis, sinus thrombosis, and empyema, blood transfusions are indicated. Many other types of infective and nutritional diseases are benefited by transfusions.

In surgery, general or special—as brain, thoracic, abdominal and pelvic, in addition to traumatic emergencies—many times the introduction of blood is clearly indicated, and perhaps life-saving. This type of treatment can be used to treat hemorrhagic shock, in preoperative treatment to help strengthen the patient, build up the quality and quantity of the blood, and to make better surgical risks. Such is the case before cancer operations, thoracic surgery, jaundice, prostatic surgery, pelvic operations of various types where hemorrhage, infection, and anemia are factors in helping to make poor operative risks.

In chronic sepsis, transfusions have an especially useful function, as in osteomyelitis, and the like.

In obstetrics and gynecology, indications arise frequently, as in the anemias accompanying parametritis, endometritis, chronic suppurating tubes, puerperal infections, infected abortions, ruptured ectopic pregnancy, postpartum hemorrhage, incomplete abortions with shock, and the like.

In medicine, and other lines of practice, we have already alluded to the hemorrhagic diathesis and purpuras. In leukemias, transfusions are indicated, but cannot be counted upon to effect a cure, and the only advantage in giving them is to cause the patient to live longer, which, in itself, might be of some convenience. The same can be said of Hodgkin's, and similar rare maladies. Indications for transfusions are found in aplastic anemia, where it is impossible to be certain upon examinatioin of the blood that the bone marrow is progressively and hopelessly aplastic. Transfusions and repeated transfusions are positively indicated in these cases. In pernicious anemia, cases relapse sometimes owing to carelessness of treatment, and these can be given a boost and fresh start by transfusion. Or, at the start of a severe case, at the time that other forms of therapy are instituted, a blood transfusion is useful. The same can be said of splenic anemia. Investigations have proved the value of this procedure in von Jackson's anemia, sprue, blackwater fever, agranulocytosis, malignant malaria, and many other chronic recurring infections, with anemia. Causes of severe poisoning from gas or other forms of inhalation vapors or ingestion of certain coal-tar derivatives, find themselves improving after transfusion. Mosenthal has proved the value of this procedure in chronic Bright's disease, and is using it to treat uremia attending renal insufficiency, to relieve the severe anemia of these cases, and as a means of combating edema by raising the osmotic pressure in the circulation through increasing the proteins of the blood. The results in acute blood-stream infection where anemia is not present, have been somewhat disappointing, although in some types of sepsis, the use of transfused blood is a most valuable weapon. The replacement of a large amount of blood from exceedingly toxic patients by fresh blood is a valuable procedure in such cases as severe burns, and the like. Severe anemias in debilitating chronic colitis are being treated by transfusions, with improvement in many cases. One could go on and on enumerating the indications for blood transfusions, but perhaps sufficient have been named to show the ever-widening usefulness of this valuable procedure.

BRAIN INJURIES

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The subject of craniocerebral injuries has become one of vital importance to every practicing physician and surgeon, especially with the increasing accident rate due to the improved highways, allowing the ever-increasing number of motor vehicles greater speed; the unguarded and disregarded railway crossings, aeroplane accidents and the industrial accidents. Inasmuch as the greater portion of these accidents do not occur in the cities, a good many of them are daily entering the hospitals of the smaller communities and country districts. Therefore, it behooves every medical man to be alert and well-informed in this particular field.

In the past, head injuries, in general, have been considered as belonging in the field of general surgery. However, a very small percentage of them require any real surgical attention. Such cases as compound skull fractures, serious hemorrhages, either intracranial or extracranial, and fractures with depression of fragments are, of course, real surgical problems and often require operative procedure.

In traumatic surgery, craniocerebral injuries have been divided into two types: those that should be operated upon, and those that should not be operated upon. The injuries that should be operated upon fall into three classes:

1 Middle meningeal hemorrhage, either subdural or extradural.

2 Simple or compound fracture with bone pressure or bone fragments in the brain.

3. Cases in which there is a rapid increase in intracranial pressure not amenable to other forms of treatment.

Extradural hemorrhage is caused by the line of fracture crossing and tearing the middle meningeal artery in the temporal region. The hemorrhage develops steadily and rapidly and as it progresses the dura is stripped from the skull, thus producing additional bleeding where branches of the artery cross from the dura to the bone. This is the one type of head injury which demands prompt and effective treatment but if recognized and treated correctly most of the cases can be saved. However, if left untreated or if treated carelessly, there is little hope for such injuries. The one and only treatment for hemorrhage is to remove the clot and tie the middle meningeal artery. As it is very difficult at times to determine when you have a middle meningeal hemorrhage the three following symptoms should be kept in mind: An interval of consciousness before a gradually deepening coma; a gradual paralysis of the face, then the arm or leg; convulsions, beginning always in the face and spreading to the arm and leg. It is likely, however, that all these symptoms may be absent or they all may be present in primary injury of the brain.

Simple or compound fracture with bone pressure or bone fragments should be operated upon. A careful examination is made by probing with a gloved finger for fragments that may be depressed. Frequently fragments are overlooked, hence causing much future trouble for the patient. If the patient's condition permits, good stereoscopic radiographs will disclose these fractures.

The non-operative cases of brain injuries are:

1. Extensive brain injury with laceration and separation.

2. Injury in which there is no primary increase in intracranial pressure, but which usually develops this later, due to an accumulation of fluid and edema.

Included in this class are simple non-depressing fractures and so-called cases of concussion. Injuries in which there are extensive lacerations and cellular separations reach a rapid stage of exhaustion and medullary paralysis. These massive types of brain injuries are fatal and no treatment is of benefit. They pass rapidly into a state of coma and death soon ensues.

The second type under this classification, fortunately, is the more common and encouraging type of injury so far as treatment and prognosis is concerned, and seldom is an operation indicated. The case presents a dazed or semi-conscious condition. There is no marked

shock; blood and spinal pressures are normal or slightly raised. Radiographs reveal nothing, or possibly a slight linear fracture. The eye grounds are negative. The pulse and respiration are normal. There is a picture of definite brain injury with no indication for surgical intervention. All of you have probably seen these cases and know that, within twenty-four or thirty-six hours, the majority will show symptoms of delayed or secondary increased intracranial pressure characterized by a slowly increasing pressure, decrease of pulse rate, increase in temperature and restlessness and approaching coma. These cases are usually responsive to proper treatment.

Although there are many methods of treatment for cranial injuries, much depends on the condition of the patient. Upon admission to the hospital, the patient is in a condition of shock. This is determined by subnormal temperature, low blood pressure, increase in pulse and respiratory rate, cold and clammy extremities. The patient is immediately placed in bed for rest and quiet; warm, dry clothing replace their garments and heat is applied externally. Sedatives are administered in the form of atrophine sulphate, gr. 1/100 (adult dose), pituitrin (surgical) 15 min. hypodermically, strychnine, gr. 1/30 hypodermically. The purpose of this treatment is to prevent further loss of fluid from the skin surfaces and hence conserve the fluid needed to maintain blood volume which is so necessary in shock. The stimulants are directed toward vasoconstriction of the peripheral circulatory bed, thus improving diastolic pressure, favoring better oxygenation and correcting the vasomotor dilatation associated with shock. Cardiac stimulants are not needed as the heart is active enough. Caffeine sodium benzoate and adrenalin are temporary violent stimulants which should be used only as measures of last resort, or to temporarily tide over a failing circulation. Morphine is resorted to only when absolutely necessary.

A hypertonic glucose solution is given intravenously,—usually 40 to 60 cc. of a 50 per cent solution. This has the very valuable effect of withdrawing from the tissues and cerebrospinal reservoir fluid which is utilized to increase blood volume. The increase in blood volume tends to raise the blood pressure, circulation approaches normal and the pulse improves. Should it be necessary, glucose may be repeated in four hours. It is often effective to add 50 to 150 cc. of saline solution along with the glucose where shock is severe. Although the giving of saline promptly combats the period of shock, it also promptly precipitates cerebral edema and intracranial pressure and for that reason the giving of it in large quantities has been abandoned.

No examination should be permitted to disturb the patient other than the few emergency requirements such as control of bleeding points of the scalp, the probing of a gloved finger to determine presence of fracture and the cleansing of the wound with antiseptics. If there is bleeding from the ears or cerebrospinal fluid leak, the ear is carefully cleansed and tampons soaked in dichloramin-T or two per cent mercurochrome inserted in the external auditory canal. If bleeding from the nose is persistent and requires attention, a finger cot packed with gauze strips and moistened with mineral oil is introduced into the nasal cavity on the side of the bleeding. X-ray examination is not considered at the time of shock unless a compound fracture is evident by the initial inspection, or depression, sufficient to be recognized easily and severe enough to justify it. Then, sometimes diagnosis is made without x-rays. The whole attention is directed toward the immediate treatment of shock and instituting active measures to prevent secondary cerebral edema and intracranial pressure.

During the period of shock the temperature, pulse, blood pressure and respiration should be recorded every fifteen or thirty minutes for the first few hours for they are of great diagnostic aid. When the temperature returns to normal or above and when the pulse diminishes to the neighborhood of 120, then the period of shock has passed. If the pulse has been below 120, the index as to the period of shock is determined by the temperature record.

Lumbar puncture is performed as soon after the period of shock as possible. It is of great diagnostic value as well as relief of intracranial pressure. Much depends upon the character and pressure of the spinal fluid and treatment is carried out accordingly. Bloody spinal fluid is the strongest evidence that operative exploration is not warranted or will be of little avail, although occasionally combined

subarachnoid and subdural hemorrhage occurs. When the fluid is found to be bloody, a complete drainage is necessary, for it has been clearly shown that the red blood cells produce intense reaction in the subarachnoid spaces and they tend to stop up the normal pathways and filters for proper elimination of cerebrospinal fluid. Therefore, spinal drainages should be instituted daily, or oftener if necessary, until the fluid is clear; then drainages are resorted to as often as a rise in the pulse pressure and respiratory changes may indicate. If the spinal fluid is clear with a pressure of 14 mm. Hg. or over, one should seriously suspect the possibility of an expanding lesion and carefully watch for signs which establish the presence of subdural or epidural hemorrhage.

Dehydration begins with the first spinal drainage, when, if possible, 30 to 80 cc. of fluid is removed. The fluid intake and output are measured, and the diet consists of a dry, solid one with the total fluid for the twenty-four hour period limited to thirty ounces. Should the patient's condition require a soft or liquid diet, this form of nourishment must be included in the total liquid allotted for the twenty-four hour period. Thirst, being an early complaint, is easily controlled by warm antiseptic gargles, moistening the lips with mineral oil or vaseline and by giving small amounts of fluid at regular intervals. Fluid restriction, however, is altered by the presence of blood in the spinal fluid. In that case, it is necessary to allow additional fluids to prompt the reaccumulation of cerebrospinal fluid for subsequent drainages.

Dehydration may be aided by the introduction of 50 per cent glucose, intravenously, followed in one hour by magnesium sulphate by mouth or rectum. The glucose tends to draw fluid from the tissue spaces and subarachnoid system in the direction of the blood stream. This fluid will reenter the tissues if not removed from the body, thus the magnesium sulphate will recapture this fluid and eliminate it entirely. There is one contraindication to the use of magnesium sulphate; if blood volume is already diminished by hemorrhage, dehydration or through shock, it is not wise to further deplete this necessary circulatory system by the use of magnesium sulphate. It is far better to build up the blood volume again by introducing small amounts of normal saline solution by vein and resort to lumbar drainages for the control of the over-accumulation of cerebrospinal fluid in the subarachnoid space. Magnesium sulphate should never be administered during the period of shock.

During the ten days or two weeks following the period of shock, lumbar drainages and the required sedatives to insure quiet and rest are, of course, continued. During this period further examinations may be carried out, such as x-ray studies of the skull made for a permanent record; a lumbar puncture with careful manometric pressure readings recorded for future reference in the case. A careful study is made of the patient for any neurological development, for we feel that all head injuries have a neurological significance and must not be overlooked.

Particular attention should be given the reflexes, the signs of focal hemorrhage, cerebritis or trauma and special reference should be made of the pupil, especially as to the size, reaction to light and the presence of hemianopsia. Dilatation of the pupil usually indicates the side on which the extravasation of blood is the greater. Deep tendon reflexes are usually lost during the early period following trauma but promptly reapper and should be noted from day to day.

Aphasia is one of the most important signs to be considered. The differentiation between aphasia and stupor must be determined early in the examination. Aphasia may be demonstrated by applying pressure upon the supra-orbital nerves. If the stupor is profound, no reaction is obtained. In patients who are aphasic and semi-stuporous, the physician may determine by this reaction whether or not there is weakness in the motor supply to the lower third of the face, when the patient is not able to respond or cooperate. When the patient is aphasic and though paralysis of half of the body is present, the patient will make an effort to remove the pressure, thus giving evidence of knowing where the pain is located. If the patient is stuporous, however, struggling is present in an effort to get away from the painful stimulus but no coordinative movements are made in which to remove the pressure or to locate the source of pain. Frequently patients have been thought to be in a state of unconsciousness when they could neither understand nor reply. This sign of aphasia is of

great localizing importance as it indicates a lesion in the sylvian area on the left side in a right-handed individual.

When a patient is dismissed from the hospital, he is given careful instructions relative to fluid intake for at least the following three months.

Case No. 1: L. L., white school boy, age 8, was admitted to the Leo N. Levi Memorial Hospital on September 26, 1932, following an injury of the head he received when he fell from a tree, striking the left parietal region on a rock. He was brought to the hospital in an unconscious condition. Past history of no importance. Physical findings: Male child, lying in bed, appearing somewhat drowsy. Examination of the head revealed a long irregular depression extending from the left parieto-occipital region anteriorly over the lateral aspect of the scalp toward the parietal and frontal regions. On each side of this depression the margins of the skull are distinctly palpable. The posterior termination of this line of fracture is evident by a stellate-like extension of the line of fracture in different directions. Over the frontal bones there is a diffuse area of skin which bears a bluish and greenish discoloration. Otherwise the head was negative. There was no clinical evidence of injury or increased intracranial pressure. Shock was treated as outlined; fluids restricted and he was confined to bed for fifty days after which time he was allowed up about the ward. The afternoon of the first day up he complained of pain in the head; this was followed by vomiting. He was then confined to bed for an additional period of two weeks. He has continued the "dry' diet with fluids restricted to 30 ounces within the twenty-four hour period.

Case No. 2: H. G., white male child, 3½ years of age, was admitted to the hospital on October 9, 1932. Forty-eight hours prior to admission patient fell from a load of cotton, striking head on concrete. Father states that the child was unconscious for about an hour following the fall. Since then patient has talked and acted normally with the exception of standing and walking. Head could not be held erect. Patient has slept almost continuously since accident. Physical examination revealed a young white child lying in bed apparently not actually ill. Examination was essentially negative with the exception of head which revealed a slight depression or concavity over the left lateral portion of the occipital bone (site of injury, supposedly) but there was no other external evidence of trauma in any region of the scalp. X-ray of skull was entirely negative. On sitting up patient sways from side to side but tends to fall mainly to the right. On standing, the swaying is exaggerated and the same tendency to fall towards the right is noted. Walking is very unstable and the patient promptly loses equilibrium and falls.

This case is reported to show the amount of actual brain injury that can occur without visual injury to the cranial vault. Especially interesting is this case and the cases reported with severe vault damage without brain injury as both were admitted within ten days of each other.

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PASSIONAL PSYCHOLOGY. Dr. Jacobus X. The American Anthropological Society, 70 Fifth Avenue, New York, 405 pages, $4.00.

This is a sequel to three previous works, to which the reader is referred as a proper foundation for this treatise. In this volume is resumed the study of the physiology and psychology of the sexual life, and the distinguishing features of the psychology of love in comparison in the two sexes. This is an interesting study in view of the present day demand for equality of man and woman in practically all phases of life. The author has resorted largely to quotations from other writers and observers, and these are supplemented by his own conclusions and opinions. While the work is of limited interest, it should be of value to students of psychiatric problems and instructors in psychology. —H. P. M.

MENTAL MECHANISMS

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(Read at the meeting of the Los Angeles Society of Neurology and Psychiatry, April 19, 1933.)

Much confusion still generally exists regarding mental and nervous disorders. Many terms and words are used to describe their various symptoms and syndromes, but in general there are two different viewpoints regarding the problem, which might be described as neurophysical or psychological according to whether we think the "nerves" or the "mind," including the feelings or emotions, are at fault.

From the neurophysical viewpoint patients are usually classified as "organic" or "functional," the latter probably being present in larger numbers, but considered unimportant, though they are economically responsible for an incalculable amount of social inefficiency and domestic infelicity. Their treatment usually falls under four types: (1) the exhortatory, in which relatives, friends, and advisers admonish him to "pull himself together," "it is only imagination," "there is nothing the matter with him," and recommend work, discipline and long trips. (2) Medical, with the use of sedatives, colored tonics, endocrine therapy indiscriminately as a panacea, or a multiplicity of remedies of suggestive value, but often disclosing uncertainty, with development of increasing symptomatology in the patient. (3) Rest and diet, of which the Weir Mitchell rest cure was the extreme example, and has a limited value as a panacea. (4) Final or dismissive, in the form of a sea voyage or change from an environment which has proved too difficult. Pursuit of this course frequently would test the most able but may, by relief of responsibility, lessen symptoms, particularly in delaying a paranoia in the early stages.

Too frequently, however, any of these methods of treatment drive the patient to the cultist and quack, who make large claims pseudoscientifically, which the unrelieved patient is glad to clutch in hope of any relief from intolerable symptoms, mental conflict, fears, distress and pain as incapacitating and unbearable, or often more so, than physical pain.

Methods, psychological in character, were offered later and may be said to have begun with Charcot, who built so well in organic neurology, and also laid the sound foundation for the scientific study of mental phenomena. Bernheim's researches into the nature of hypnotism, the more modern formulation of pithiatism by Babinski, and the advances in psychological approach made by Janet in the dissociation of ideas or personality, all added greatly to the knowledge of mental mechanisms.

Wundt and his co-workers attempted to explain normal behavior in terms of neural mechanisms. Pavlov's work, also in physiological psychology with conditioned reflexes, attempted to interpret the etiology and symptomatology of the neuroses. Watson's behaviorism is an extension of these same principles. All these attempts at interpretation of mental mechanisms represent an organic, biologic approach, and it was reserved for Sigmund Freud to formulate a purely psychological concept of the etiology, development and treatment of the neuroses. This conforms to the methods by which the greatest advances in medicine have been made, through etiological research, by analytical investigations, tracing back from symptoms to cause, and allows application of a general scientific technic in an attempt to understand disorders in psychological medicine as pathology forms the basis in general medicine. An insight into and understanding of the mechanisms of the neurosis, and also the psychosis is offered by analytical psychology, with assistance and definite help in their treatment, of inestimable value.

Regarding applicable treatment, it is necessary to know cases which are suitable for different treatments. In some psychopathology is not of primary importance, but in any, must not be considered unimportant. In fact, no matter what the illness—the personality, with all its attributes—the status, training, environment, problems, tendencies of mood, must be given consideration for best success in treatment, rather than treating the patient as a case number, or as a scientific disease entity.

Mental and nervous disorders which may not need special investigation of the psychopathology may be classified as (a) fatigue states, (b) toxemias, (c) endocrine disorders, (d) disorders due to shock, as thunder, primarily organic, but which may be causative later of psychological pathological conditions,

(e) disorders due to environment, as seen in workers exposed to excessive noises, undue fatigue, monotonous repetition, or other health hazards.

CASES REQUIRING PSYCHOLOGICAL TREATMENT.

Insomnia, if neurological, is a failure of neural integration, and the patient may respond to sedatives, but in some there may be presented underlying problems in psychopathology—hence intractable to any treatment but psychological. Here the insomnia becomes useful—the symptom is purposive even though it may be quite dissociated from behavior.

The Nervous Temperament. Integration of the nervous system normally occurs with growth and development; for example, enabling the baby to walk and later develop finer movements of the hands and to speak. Failure or delay is a sign of hereditary defect.

The nervous temperament usually described as "highstrung" shows disabilities which may be divided, as: (1) failure of integration; the nervous system, — physical, emotional, and mental—fails to work together in harmony as a single unit; (2) over-sensitiveness to stimulus, especially fear, in those who are oversusceptible and more acutely subject to disturbances; (3) inadequate or indeffinite responses to stimulus. In this type of response there is difficulty in responding adequately or definitely, either due to lack of primary dynamism, or an uncertainty as to the course of action indicated, resulting in increased excitability, and life is made a problem, with a tendency toward instability. In these patients, adjustment is often made through symptom formation to the challenge of reality. The symptoms are therefore purposive, and only from this viewpoint may therapy be successful. It is in these patients that conversion symptoms frequently appear, as tics, pareses, or other incapacities prohibiting continuance in an unpleasant or monotonous, dissatisfying occupation or environment.

DYNAMIC PSYCHOLOGY.

The conception of "purpose" is essential to understanding the dynamic aspect of modern psychology. Purposive behavior, of the different organs of the body, may be traced both in health and disease. The ordered development and specialization of function of the physical organs may be considered as being purposive; in the alimentary tract, digestion and its other usual functions; in the nervous system, inhibition, control, selection. The organization of the body as a whole depends upon harmonious action of its various functions, a coordination of the purpose of each unit system (into a single team) under control of the central nervous system. The purpose of the whole unified system is to produce greater order, freedom, and power over the external environment in which the system lives. Purposive behavior is further shown in organic medicine, for example in local infection from a septic foreign body, with resultant inflammatory reaction in a purposive attempt to remove it and act remedially. There is no consciousness of purpose in this response, and it is important to realize **consciousness is not necessary for behavior to be purposive.** Not all "behavior" is purposive, however, as in neoplastic growths or tremor which is secondary to or resultant from a deeper cause, where symptomatic treatment may be applicable, but if such treatment be applied to psychological medicine, where purposive disorders are far more commonly found, results are necessarily disappointing.

The personality as a whole has certain primary needs, which are sought purposively, though not necessarily consciously. Most important of these are: (1) love, a feeling of priority; (2) protection, a feeling of security; (3) power, a feeling of control. Consideration of cases will show the degree of satisfaction along these three lines which may be attained through illness. The purpose of the disability is to achieve what the patient wanted or needed, whether he was conscious of it or not. The illness was a means to an end, and the end was love, protection, power, any or all. Hence it is not true to say the patient wants his illness as such, but as a means to an end. He wants what he gets out of the illness, and not, as a rule, any particular symptom. He is not conscious of his need, but love, protection, and power are goals which human nature is preordained to pursue and find attractive. Thus, frequently a symptom undesirable in itself, is developed in order to attain a goal which is desirable. Also, conflict plays a part, wishes may not be socially tolerable or even consciously acceptable. Social adaptation is of comparatively late development, is superimposed upon childish egotism, and there is fre-

quent conflict between "heart and head," between feelings and thoughts, of many of which we are unconscious. The extension to which behavior is motivated by unconscious processes is not realized. On the physical plane inflammation is a purposive unconscious process, and on the emotional plane conversion hysteria is another example of a similar unconscious process.

Man is more than the sum of his own experiences and his behavior is often motivated by past primitive, racial and childish instincts and wishes which are not tolerated by his higher reason and conscience. They are, consequently, "repressed," but still remain dynamically active, and therefore give rise to "conflict" and often to subsequent symptom formation. Consciousness is all of which we are aware, but does not contain all our motives. Consciousness as a whole, however, is unified in a way that pleases our standards, by "rationalization." It looks deceptively complete, and this deception in itself is purposive in affording both justification and an organized simplicity and unity. Rationalizations are liable to be defended with great emotional intensity—the latter usually being indicative of the existence of the former. Purpose or wish fulfilment may evade reality altogether and achieve the desired end in "phantasy" which is pathological. Adaptation is wish fulfilment through reality, and phantasy is false adaptation. Being a purposive and progressive detachment from reality, it is a fundamental factor in the development of psychoses.

THE WAY THE MIND WORKS.

Knowledge regarding development of the mind, and composition of its parts gives a better understanding of symptomatology of mental disorders. Mind is more than consciousness, and includes the basic energy of life, the wishes and feelings, instincts and emotions, which existed prior to the development of a differentiated awareness, and, therefore, need never enter consciousness any more than do the normal activities of physical functions, such as digestion. Accepting the word "mind" in this larger meaning, there is no inherent contradiction in the phrase "unconscious mind."

The development of the mind may be traced from its primary function of serving by selection and inhibition, as a coordinative cell station in the medullary ganglia, through successive phases of developing self-awareness, self-expression, and self control. The highest levels of consciousness, associated with the most developed superficial cerebral cortex, are inhibitory to the deeper levels of instinct, feeling, and impulse which are more closely associated, however, with the intermediate picture thinking level of the deeper cortex.

The predominant importance of the picture thinking level may be seen, with differences, in savages, children, and in genius, but particularly in neurotics. It forms the basis of gesture and language, especially mythology, poetry and slang. It determnies the use and meaning of symbolism, and possesses advantages of simplicity, economy of form, and being an accepted vehicle for expression of feeling. Picture thinking requires interpretation, however, wherein lies danger that it may be regarded from the superiority of consciousness as childish and ridiculous, or blindly accepted without interpretation. This failure to interpret symbolism and to differentiate feeling is the chief characteristic of all forms of mental disorder.

Dreams and symptoms both illustrate the same picture making activity, and require interpretation in terms of their feeling value before they can be controlled or understood by consciousness. The apparently ridiculous vagaries of dreams and the disordered behavior of insanity both need to be interpreted as a foreign language of simple picture forms and associated feeling tones, when they are found to be inspired by motive and pregnant with meaning. Such interpretation opens the way to deeper understanding of motive and behavior, but does not necessarily eliminate the motive itself, which must be modified or redirected in some way agreeable to the higher dictates of consciousness before harmony of thought and feeling can be attained.

MIND: ITS EVOLUTION.

As we learn by experience, there are important causes of error in our judgment. The importance of "this, now" is over-estimated, instead of realizing it is the apex of a pyramid of past experience, association by similarity and difference, the base of which lies deep in the past, far beneath consciousness. Further extension of this difficulty occurs in relation to symbolism—the effect appropriate to one

thing being transferred to things similar, but also to all symbols of it, which may be quite different and ridiculously inappropriate. Thus, fear of being punished (the effect) may become transferred from experience of father (the source of the feeling) and firmly attached to thunder (the symbol of wrath) and we are wrong, having developed a "thunder complex."

Any intense emotional trauma may give rise to a strong effect which, through persistence, may become attached to a later experience to which it does not correctly apply. A common example of such transferred effect occurs where a premature sexual experience has precipitated a strong feeling of fear and guilt, which later becomes attached to all subsequent sexual experience. Wrong feelings cause false judgments and application of the lesson of a single experience too generally may create a "complex." The commonest, subtlest form of trauma is found where there is not one but many injurious experiences, as, repeated bullying by the father, or spoiling by the mother, which may create an inferiority "complex" by application of the inferiority feeling to all subsequent circumstances, to which it does not apply. Another source of error in regard to our judgment of "this, now," results from our feeling values not being derived only from personal experience, but anatomically, physiologically, and psychologically, one is recapitulating at different times, the essense of the sum of racial experience.

DEFENSE MECHANISMS.

Fear, guilt and **inferiority** are the three basic feeling patterns which lie at the root of a great deal of subsequent mental disorder. They are primarily independent of individual experience, although they may be modified or exaggerated during the lifetime of the individual. In general, they are universal feeling tendencies, are intolerable, and quite unconsciously, we all do our utmost to overcome them by defense mechanisms. Growth and a sense of humor are the psychologically desirable methods of overcoming their resultant feelings of intolerable tension, but our defense mechanisms tend to operate automatically and unconsciously, with results that are not always either desirable or successful. Overcompensation provides a sense of power at the expense of making undue demands upon capacity; projection places the blame elsewhere than upon ourselves, causing interference with the liberties of others, who are often in much need of defense themselves; and identification lends a vicarious satisfaction in the lives of others, but tends to release emotions in propaganda or partisan attachments. The disadvantage of defense mechanisms lies in the fact that the fundamental feeling state is liable to remain unaltered.

The causes which stimulate fear are essentially experiences which give rise to a feeling of inadequacy—the sudden, the unfamiliar, and the threat of punishment. The resultant explosion, however, may be far greater than the immediate experience merits, owing to the added influence of transferred affects. Phobias are examples of such feelings of fear transferred to more or less innocuous symbols, which owe their significance to previous personal or racial experiences.

The more important defense mechanisms against fear are: inertia, which prserves the safety of the status quo; regression, which seeks the reverse goal of infancy and maternal protection; overcompensation, which attempts camouflage by overactivity, as shown by the bully, the bluffer, and the braggart, a sign of weakness and masquerade of strength; and apprehension, which clutches feeblest hopes of security, at every straw of material protection imaginable.

Guilt and inferiority are primarily inborn, but may be modified by experience. Excessive guilt feeling tends to inhibit the satisfaction of all desire until the chief motive is to avert punishment, evidenced in a mild degree in superstitious behavior and pathologically in the obsessional neurosis. Defense mechanisms appearing are repression, overcompensation, projection, identification, and self pity, evidenced by sacrifice in primtiive races, and by the castration motive in neurotics, as an act of self-deprivation and self-punishment, which may result in severe physical damage and self-destruction in the psychotic.

The causes of inferiority feeling may be classified as, (1) hereditary, (2) acquired; (a) infantile, tendency for first impression of inferiority to remain throughout life; (b) circumstantial, position in the family, age intervals, domestic environment; (c) organic, (A) conscious, e.g., size, squirt, paralysis, (B) un-

conscious, gonad deficiency, cardiovascular hypotension. The common defense mechanisms are overcompensation, projection, identification, and the wish to be inferior, self-gratification with masochism and regression as motives, the willing martyr resulting.

WISH FULFILMENT.

Psychologically, the energy of life comes from motives and emotions which are inhibited, modified or expressed through the selective filter of consciousness. One motive satisfied will give pleasure, but to achieve happiness all motives must be directed in harmony towards the single goal of the unifying ideal. The variety of possible motives leads inevitably to conflict, frustration, and loss of mental efficiency until the unifying goal can be discovered. Frustrated wishes tend to cause irritability, temper, depression, cynicism, or a resort to the easier path of fulfilment in phantasy, lying, or stealing. The great inhibitor of impulse is conscience, which is in itself an example of unconsciously motivated behavior and as such a very unreliable guide, being derived largely from superstition, vanity, suggestibility, and fear. Many mental problems are due to overwhelming conscience, rather than to undesirable impulse. Alcoholism presents a picture of psychopathology, involving problems of motives and emotional development. Life is largely a projection on the screen of individual consciousness of what we feel and wish, so that we live to varying extents in a world of our own creation and illusion. This concept may be as confused as are the unconscious motives from which it is derived, and should cause us to be more sympathetic of the incoherences, rationalizations, fears and bizarre ideas of mental disorders of others, more severe than our own.

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FOOD ALLERGY

(A Resume of the Literature; Personal Observations.)

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(Continued from April Issue)

PATHOLOGY

The characteristic changes in an allergic lesion are edema and deposition of eosinophiles, and, in many tissues, muscle spasm.

In pylorospasm, Ward and Cohen and Breithaupt say there is edema of the mucosa and submucosa and a contraction of the muscle fibers.

Ecker and Bikind, Eyermann, and others, have actually observed intestinal spasm in allergic states by means of the x-ray.

Bogart found, at operation on an individual with a gastro-intestinal lesion, that there was blood-stained fluid in the abdominal cavity; the ileum and jejunum were congested, edematous, and ecchymotic, with walls nearly an inch thick from edema, so stiff as to prevent peristalsis, and with the lumen nearly obliterated.

Manwaring, Beattie, and McBride recorded that, in a dog with an anaphylactic reaction in the intestines, the characteristic lesions are stasis, edema, desquamation, hemorrhage, and necrosis of superficial areas.

Wellbrook discovered a case of duodenitis with a much thickened mucosa, due to infiltration of leukocytes and eosinophiles. Jelks says that in mucous colitis the mucosa is injected and edematous.

Gay writes that two cholecystectomy, and two appendectomy, cases, operated upon by mistake, had intra-abdominal allergy and

yielded tissues with signs of chronic inflammation and an abundance of eosinophiles.

Morris brought up with his stomach-tube, from an allergic stomach, a piece of stomach tissue which showed marked edema.

Garoh and Hari found marked edema in urticarial lesions. Opie observed extensive inflammatory edema in experimentally produced phenomenon of Arthus. Alexander says localized edema is the characteristic pathologic change in asthma, hay-fever, and urticaria. Cooke and others also recognize eosinophilia as characteristic of allergy.

Cohen says that, ten minutes after injecting a skin with pollen to which it is sensitive, many polymorphonuclear leukocytes, a few of them eosinophiles, have gathered at the site; after thirty minutes, ninety per cent of the leukocytes are eosinophiles. The nasal secretions from an allergic nasal lesion are apt to have a great preponderance of eosinophiles. Drueck found that the rectal discharges in mucous colitis had enormous numbers of eosinophiles. The characteristic pathologic change in any and all allergic lesions, he says, is edema.

Moll observed a polycythemia after a series of severe attacks of allergic asthma.

The question of bronchiolar muscle spasm in asthma is not receiving the attention or emphasis that was given it a decade or two ago.

The pathologic change in asthma—aside from the possible muscle spasm, the mucosa edema, the infiltration of the mucosa with eosinophiles, the accumulation of mucus and cellular detritus within the lumen—are circulatory changes in the bronchial walls and elsewhere, dependent upon non-passive expirations. The change consists in a congestion of the bronchial walls during expiration and a depletion of these areas during inspiration. This I have fully explained in my book on asthma; so far as I have been able to learn, there is no other theory than that of non-passive-expiration which fully accounts for and explains difficult exhalation and the easy inhalation of asthma.

Ratner and many others have agreed that mucous plugging of bronchi is proved and that the theory of spasm of the bronchiolar muscle is not proved. Sudden deaths in asthmatics, Ratner thinks, however, may be due to spasm of the very terminal bronchiolar muscle. Pinness and others think the sudden deaths usually come from plugging of the bronchi with mucus, often after morphine.

Barber and Oriel have demonstrated substances in the urine of allergic individuals at the time of a paroxysm, which they have designated urinary proteoses. Barber says there are two proteoses in the urine—a primary and a secondary; the secondary is from the action of sensitized cells upon the primary proteose. Jansion, Giard and Martinaud found "endo-antigens in urines, which they seem to prove are the allergens responsible for the allergic phenomena of the patient from which each specimen was obtained.

EXPERIMENTAL DATA

Koessler, Schloss, and Curshmann produced sensitization in guinea-pigs by transfusing them with serum of allergics. Rosenau, Anderson, and Otto proved that hypersensitive guinea-pigs transmit sensitization to their offspring. This was confirmed by Ratner, Jackson, and Gruehl.

Ratner demonstrated that antibodies and allergens, either or both, may pass through the placentas of guinea-pigs and cause sensitization of the fetuses. If the allergens are given to the mother late in gestation and she has not been previously sensitized, the sensitization in the fetus may develop several weeks after birth. Human beings probably behave just as do guinea-pigs in this regard.

Ratner and Gruehl gave pregnant guinea-pigs, a few days before term, intravenous doses of horse serum; the young were not sensitive to horse serum at birth, but subsequently became sensitive to it and, in turn, transmitted the sensitivity to their offspring. Otto reared young from ricin non-sensitive mothers and ricin-sensitive sires; the young were sensitive to ricin. The sensitivity must have been spermatically transmitted.

Pagniez, Mouzon, and Turpin transfused animals with blood of epileptics and the animals developed convulsions. Blood from normal persons in control experiments did not produce convulsions. Boston and Henry accidentally transfused two non-epileptics with blood from an epileptic and recurring convulsions resulted in both cases.

Prausnitz and Kuestner took serum from the blood of a person sensitized to a protein, injected it intradermally into a non-sensitive

person, and found that this area became sensitive to the respective proteins in question. This is a passive transference of sensitization —often spoken of as the Prusnitz-Kuestner test.

Bell and Ericson found the Prausnitz-Kuestner antibodies in the blood of sensitive mothers but not in the cord blood of their offspring. Van Leeuwen demonstrated that transference of immunity to animals by injecting serum from allergics depended upon the allergics' intensity of sensitization and also upon the time of withdrawal of the blood with relation to attacks. DeBesche and also Fragani demonstrated that, immediately after an asthma paroxysm, the blood does not contain the substances essential for transferring sensitivity to animals or to man; before long, however, the substances appear.

Smyth and Bain passively sensitized areas of skin in new-born infants and gave them protein by mouth; the sensitized areas reacted.

Waringer took serum with antibodies of ovalbumin, added to it ovalbumin, and found that the one neutralized the other as tested by the Prausnitz-Kuestner reaction. Again he found that the antibody-allergen combination is irritating to the skin of infants. In sixteen allergic infants the passive transference of sensitization was negative five times, showing, the author thought, that credence should not be given to a negative test.

Voit observed that egg-white administered by rectum increased the urine nitrogen, indicating absorption of undigested protein.

Smyth and Stallings introduced egg-white into the colons of healthy infants; passively sensitized areas reacted. The proteins of egg-white must have been absorbed practically undigested.

Waltzer and Waltzer, by means of the passive transfer of sensitivity to an area of skin and feeding the appropriate antigen by mouth, obtained a reaction in the sensitized areas, thus proving that absorption of protein may take place from the upper alimentary tract.

Brunner and Walzer kept sixty-five persons on a fish-free diet for twenty-four hours and then gave them intradermal inoculations of serum from fish-sensitive patients; the subjects were then fed fish. Reactions in the sensitized areas developed in five to fifteen minutes; one reaction occurred in two minutes, due probably to a hypochlorhydria. Giving alkali with the fish caused the reactions to come more quickly than otherwise. Food in the stomach at the time of giving the fish prolonged the reaction time. A peculiar observation was that allergics had a longer reaction time than did non-allergics. Sussman, Davidson, and Walzer, using serum from egg-sensitized patients for the Prausnitz-Kuestner reaction and giving egg, confirmed the experiments of Brunner and Walzer with fish serum and fish feeding; they fed peptone an hour previous to the egg, as has been recommended by numerous workers for preventing allergic reactions. Their conclusion was that the peptone had no effect upon the time or intensity of the reaction. A person with ulceration of the sigmoid and colon had extraordinarily rapid absorption of the protein when it was administered by enema.

Schloss and Worthen proved the absorbability from the alimentary canal of whole and partially digested protein by precipitin and anaphylactic tests.

Walzer and Walzer found that protein skin tests appear quickly in those with hypochlorhydria and are retarded in those with hyperchlorhydria.

Hill observed vasodilation as the consistent pathology in the skin from a positive skin test; the serum outflow and the wheal are the direct result of the vasodilation.

Oriel discovered that, when a person allergic to egg, eats egg, his urine develops a substance which, when applied to a guinea-pig's uterus, causes contractions; a urine from another sensitive person containing substances from another protein, applied to the same uterus will cause further contractions. He concludes that the application of urine to the uterus of the guniea-pig is an excellent test for the presence of these substances which he has named urinary proteoses. Rats are ordinarily not easy to sensitize to protein unless they are kept on a strict bread-and-milk diet, and then they become sensitive to these substances.

Opie reversed the phenomenon of the usual anaphylactic reaction by first introducing antigen into the blood and then antibodies into the skin; at that point and time the anaphylactic reaction developed. The conclusion was that it is the antibodies which determine which tissue will be affected and the tissues them-

selves have apparently not been directly affected until the time of the anaphylactic reaction, which is the phenomenon of Arthus, an extensive inflammatory reaction.

Donyzs produced arthritis in rabbits by injections of horse serum.

Manwaring and associates took the liver from a dog sensitized to a protein and transplanted it into another dog, injecting the protein, to which the first dog was sensitized, into the second dog, caused it to have anaphylactic shock; their conclusion was that liver makes an antigen of the protein. In dehepatized dogs, moderate sensitization does not call forth smooth-muscle spasm; the liver seems to liberate a histamine-like substance made from the protein; smooth muscle from non-sensitized animals transplanted into a sensitized animal behaves just as does the smooth muscle of the host on being shocked with protein. Blood drawn from the vena cava on immediately initiating anaphylactic shock, when transfused into normal dogs, produces anaphylactic reactions; blood from other vessels does not have this effect. The indications are that the liver manufactures the antigen — probably through a digestive effect upon the absorbed undigested protein.

Burtasch, Feldberg, and Nagel transfused the lungs of guinea-pigs which were sensitized to a protein with that diluted protein and the lungs gave off a substance which had the power to cause contraction of smooth muscle. Other tissues than liver produce the antigens.

Dragstedt, Gedaner-Fuelnegg, and Mullenix took a small amount of thoracic-duct fluid of animals in anaphylactic shock, diluted it and found that it caused strips of guinea-pig intestines to contract. This substance responsible for stimulating contraction, they designate "allergic hormone;" it is not found in non-sensitized animals; when injected into human skin it behaves like histamine and sets up a wheal; it is dialyzable and thermostable.

Novy, de Kruif and Novy produced anaphylactic shock in guinea-pigs by using peptones.

Thiberge discovered that the site of former hay-fever tests swelled during paroxysms of hay-fever and that massage of the test area might produce an anaphylactic reaction.

Lamson had about equal reactions in non-allergics and allergics from the use of histamine.

Pentinalle regularly obtained nystagmus in one rabbit during anaphylactic shock.

Metzger administered 500 cc. of a 25 per cent glucose solution, or 1000 cc. of a 10 per cent glucose solution, to asthmatics, with definite benefit to the paroxysms.

Choremes gave to three children sensitive to tuberculin, increasing daily doses of hydrochloric acid for three and one-half months with an increase of the pH of the urine, indicating an acidosis—and a definite decrease in the size of the tuberculin reactions at the end of this period.

SYMPTOMS AND CLINICAL COURSE

Whatever the system or systems involved, the symptoms of allergic manifestations are apt to be slight in the beginning and perhaps for a considerable time thereafter. Emphasis needs to be placed upon the importance of recognizing the early symptoms. We physicians must first learn to seek for the early symptoms of one or another type of allergy and then we must teach our patients ot give heed to them. Allergic "lightning" does not strike from a clear sky. We must become allergy-minded. The danger is not that one will see allergy when it is not, but that one will overlook it until it is well advanced. At least, that is still my experience after years of work in the field.

Potential asthma should be recognized at the first indication of bronchitis or with the frequent or protracted nasal "colds." Pruritis should be investigated and food allergy thought of whenever there is no other proved cause; the same applies to gastro-intestinal symptoms and other possible manifestations, as mentioned under the "types of allergy."

Whenever the symptoms are out of proportion to the discoverable pathology, it is well to think of a food allergy.

Dennis and Moore and others called attention to the frequent association of infection with food allergy.

Drueck, Balyeat, Piness, Vaughan, Rowe, and many others call attention to the importance of ascertaining if there is a history of previous allergic disturbances, in attempting to arrive at an interpretation of the symptoms, as to whether they are or are not allergic.

Brock, for example, says there is a relationship between asthma, psoriasis, and gout, and that treatment of one benefits the other two.

Even severe cases go unrecognized for years. Vallery-Radot and Blamautier describe a man who for twenty years had weekly attacks of acute gastric pain, nausea, fatigue and severe swellings here and there; at one time edema of the glottis was so severe that tracheotomy was contemplated. All therapeutic measures failed; death came probably from edema of the glottis. Piness and Phillips had a patient in chronic invalidism, with intestinal ulceration, bloody stools, extreme emaciation, absolute bowel incontinence, diarrhea, tenesmus, dehydration, and cecostomy, who was found sensitive to foods; he had been utterly incapacitated for years. All offending foods were eliminated; no other treatment was given; recovery was rapid; he became mentally and physically active.

Discussing asthma, Cooke says that the so-called infectious asthma exhibits eosinophilia to about the same extent as do those proved definitely to be allergic, and therefore probably all asthmatics should be considered allergic.

Moore says children rarely have asthma but they frequently have eczemas; after two, the bronchial, gastro-intestinal, and genito-urinary tracts become involved. He also says allergic diseases are rare in eastern Europe, less rare in western Europe, prevalent in England and extremely common in America. No explanation of these differences has been offered.

Spangler believes that, even in brain lesions with epilepsy, there is an allergy either acquired or hereditary. He has found that epileptics have various other allergic phenomena. One person as a child had asthma—later becoming epileptic. The periodicity of epilepsy compares favorably with that of asthma, migraine and urticaria. Skin reactions are found in about the same proportion in epilepsy as in well-recognized forms of allergy. Other writers on epilepsy present similar views on its clinical manifestations.

Rackemann, Waldbott, Piness, Vaughan, and many others have commented that a large percentage of allergics, at one time or another in their lives, have had two to several forms.

Regarding migraine, Eyermann, Liveing, and others found that the duration of the pain seemed to depend upon the amount eaten of the offending food; the time elapsed between taking the foods and the appearance of the migraine is individual and in one series varied from a few minutes to six hours. Nasal blocking, coryza, dizziness, abdominal distress, nausea and vomiting, and edema of face or elsewhere, were all common accompanying symptoms of the migraine.

The disturbances within and in conjunction with gastro-intestinal allergy, are often of the most serious type from the standpoint of the patient. A patient with indigestion or dyspepsia rarely gets much sympathy.

The following abstract of an article by Gay summarizes in an excellent way the observations of many allergists. Abdominal allergic reactions have varied symptomatology and hence may be difficult to recognize. There may be much or slight indigestion or excruciating attacks of pain, which is more common than generally suspected; a history of associated sensitization is often lacking; in infancy, attacks of urticaria or eczema or other allergy may give the clue. Colds, sinusitis, morning sneezing, food disagreements or dislikes, chronic abdominal complaints, mental depression, nervousness and fatigue are often encountered; bloating, constipation, right upper quadrant pains, vague discomfort, headache, ulcer-type pain, right-lower-quadrant pain, unusual fatigue, unexplained diarrhea, nausea, lower central abdominal pain, epigastric pain, left upper quadrant pain, chafing, cramping pain and sour stomach, are other symptoms. The most frequent symptoms in the series of Gay were pain, constipation, gas, and bloating. Twenty-one of the patients giving this array of symptoms had been operated upon one or more times with not more than temporary relief; all of the series had hypothyroidism. Tenderness in epigastrium, in the gallbladder or appendiceal region, may be extreme and dependent upon certain foods in the diets. Proctoscopic examinations often showed a reddened rectal mucosa with mucus. Thirty-two had complete gastro-intestinal x-ray studies: diagnoses of spastic colon, diseased appendix, colon hypermotolity and gallbladder disease were not infrequent. The most frequent food reactions by skin test were from wheat,

eggs, beef, milk, corn, cocoa, rice, chicken, tomato, pepper, coffee and vanilla. Cutaneous tests should be done on all hypothyroidism individuals who have gastro-intestinal symptoms, even though disease is demonstrated roentgenologically; if eosinophiles exist, the case is apt to be allergic. A proper diet may give relief. Persistent allergic reactions may give a low state of vitality and a chronic state of inflammation. Definite localized tenderness will often disappear with the elimination of offending proteins. One patient, who had had a cholecystectomy, suffered severe pains in the gallbladder region after eating either apple or beef; two cholecystectomies and two appendectomies yielded tissues with chronic inflammation but with an abundance of eosinophiles in the walls of the removed structures. In addition to skin tests, a food diary may be of help in selecting the ideal diet in any particular case; a diet of glucose and water for forty-eight hours and then an addition of one food at a time, is preferable to Rowe's elimination diets. A patient who cannot eat certain foods in one part of the country may eat them with impunity in another. Thyroid therapy may be beneficial; sunshine is helpful; calcium is rarely, if ever, useful.

Gay does not mention intestinal hemorrhage as occurring in anaphylactics, but Rowe, Lintz, and others say this is not uncommon. If Hennoch-Schonlein's purpura is allergic, and it seems that it is, hemorrhage from any part is not to be unexpected in food sensitizations. Small bruised, "black-and-blue" areas are particularly common in the allergics.

(Continued in June number)

SEX HABITS: A Vital Factor in Well-Being; By A. Buschke, M. D. and F. Jacobsohn, M. D.; Translated from the German by Eden and Cedar Paul; Foreword by Gerard L. Moench, M. D.; New York; 1933; Emerson Books, Inc.

As the title of the book states, this is a subject the importance of which to the human race will scarcely be overstressed. It has been the duty and privilege of the reviewer to have read a number of books upon the subject. For statements of fact, simplicity, terseness, and nicety of presentations and for the ethics and philosophy, I can recall no book which throughout is on so excellent a plane. The facts upon the function and structure of the sex organs is presented in an admirable manner. The layman, probably with a dictionary to define certain terms, should be able to read the book with understanding and profit. —O. H. B.

RAGWEEDS AS SPRING POLLINATORS.

E. A. GATTERDAM, M. D.
Phoenix, Arizona

The unusual climatic conditions of the past winter, with its mildness and the early spring, have altered materially the growth and pollination of many of the weeds throughout the Salt River Valley and other sections of Arizona. Apparently the effect on the trees was slight, as they pollinated only about one week earlier than their usual time. Rabbit bush (franseria deltoides) pollen made its appearance in February, about three weeks to one month earlier than usual. Desert ragweed (franseria dumosa) apparently was little affected and bloomed the middle or latter part of March. Russian thistle and careless weed (amaranthus palmeri) were early in many places throughout the valley.

The most unusual pollination, however, occurred in the slender false ragweed (franseria tenuifolia). Normally this weed begins to grow about July and reaches its pollination period in September or October, going to seed in about one month. It is an annual and propagates by seeds. In April of this year this ragweed was seen beginning to grow and by the latter part of the month in some sections it had reached a height of from two to three feet. In Phoenix, during the first few days in May, plants were found pollinating in the eastern section of the city, and, at the present time (May 12) the pollination is more or less general. Undoubtedly the seed from this weed began growing during the warm winter months.

The same condition is holding true in and about Prescott (altitude 5300 ft.). In a recent survey there, Russian thistle is well up and pollinating, along with the scrub oak. Careless weed, however, has not as yet made its appearance generally. The bur ragweed (franseria acanthacarpa) and the Western ragweed (ambrosia psilostachya) can be seen growing, the former reaching nearly two feet in height in places. Budding has not as yet taken place. The western ragweed is a perennial and propagates from its rootstocks and seeds while the bur ragweed is an annual and springs from its seeds only. These weeds usually begin pol-

linating the first part of August, the bur ragweed being a little later than the western. This year, however, with the early growth they will undoubtedly begin releasing their pollen in the next month or so.

With the early warm spring this year and the advanced pollination of many of the weeds the problem of treatment of the hay-fever and asthma patients will be more or less confusing and difficult unless the growth and development of these weeds is carefully watched.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

ART AND SCIENCE IN MEDICINE AND PUBLIC HEALTH

(Condensed from an address delivered to the New Mexico State Nurses' Association, April 6, 1934.)

When we say that medicine is both an art and a science, how do we distinguish these two elements in the practice of healing?

Science, or the scientific method, consists in the collection of a number of observed phenomena, the classification of these phenomena, the formulation of theory to explain their occurrence, and the testing of the theory by experiment. Finally, when our theory has successfully stood the test of many experiments performed by many different scientists, we call it a law and use it as such until somebody discovers another law which is still more satisfactory.

The artist also observes phenomena. He collects and classifies them in his subconscious mind. His 'theories' appear in consciousness as a sort of inspiration. His experiments are not controlled and so the rules which govern an art are less reliable than the laws which govern a science and are quite properly regarded as less binding.

Art in medicine has two advantages over science. The free association of the subconscious mind tends to relate phenomena of widely different variety and so to make new and fruitful syntheses. The second advantage lies in the great rapidity with which such classification and synthesis can be accomplished. Compared with the speed of mental processes even the electrical sorting of punched cards is a slow and laborious process.

But the use of mental processes carries with it two disadvantages so serious that medicine has never been able to make any important advance save when science has invaded its realm of art. The first failing of the human mind is a readiness to believe in magic. Even today, where healing is carried on without any scientific control—as in christian science, faith healing, and the like—it is plain that belief in magic controls the exhibition of art and largely stultifies its results. The second failing of the human mind is its inordinate interest in the self. Have you ever been told by a patient of how a particular drug affected him? And have you noticed that that was the crucial experiment? To that patient the results (real or imaginary) of that drug upon himself fix the properties of that drug for all time. The physician who practises medicine as an art is governed by his own experience. This is perhaps only a repetition of what I have already said: that the experiments of the artist are uncontrolled.

From Hippocrates to Galen, medicine was under the influence of the scientific method. For more than a thousand years after Galen, medicine was practised as an art and made no progress. Today we use a happy combination which insures both the best interest of the patient and the progress of knowledge. But less and less do we rely upon the art and more and more upon the science of medical practice. Take the diagnosis of typhoid fever. The artist detects an odor which no instrument can measure, he notes symptoms which may be present in typhoid fever and may be present apart therefrom: bronchitis, or stupor, a raised temperature and a rapid pulse which to his touch may feel dicrotic. The symptoms have each a certain value assessed in the observer's mind on the basis of past experience. The particular combination of symptoms has also a certain value and there is no published table to give the probability of a positive diagnosis for each particular combination of symptoms with a given prominence of this one or that. Now the stored experience in the mind of the diagnostician must be ransacked and the valuable elements rapidly collated and that mys-

terious function of judgment brought into play.

But here comes a report from the laboratory that a culture of typhoid bacilli has been found in the patient's blood. And at once the art of medicine is bowed into a secondary place.

The value of the close relationship of patient and physician is a value in the art and not in the science of medicine. When the diagnosis of tuberculosis depends on the estimation of fatigue, it is of the greatest importance to know something of the personality of the patient. When it depends upon the interpretation of an x-ray film, the patient need not even be in the room. Of course, at the present time, the diagnosis of tuberculosis depends not upon the one or upon the other, but upon both, and the patient-physician relationship is still of the greatest importance. We can see, however, that it is the growing use of exact scientific methods in medicine which compels us to cry again and again: Do not rely only on the laboratory, do not forget that you are dealing with personalities and not with machines!

Medicine is an art which in the last century has come to employ more and more the scientific method. Public Health on the other hand was born a science, and until very recent times has been mostly contemptuous of the artist's methods. The scientific development of sewerage and the purification and sterilization of water supplies have almost eliminated typhoid fever from city life, though probably not one in a hundred of the citizens knows or cares how this has been done. But in other directions the science of preventive medicine has advanced far beyond its practical application. In the fields of immunology, of nutrition, of rural sanitation, how vast the possibilities, how insignificant our accomplishment! It is not for lack of exact knowledge that our people still suffer and die from syphilis, tuberculosis, diphtheria, and the intestinal infections. We know enough to abolish all of these within a generation. But we can go no further without popular support. Such obstacles as popular inertia and indifference, resulting in inadequate appropriation for public-health work on the one hand and inadequate cooperation on the other, cannot be surmounted by the scientific method. Public Health cannot function any longer as a pure science. We need the artist's help. We need men and women in our profession who can breathe upon the dry bones of scientific discovery and make them live. We need orators and writers and public-health nurses. We need especially the help of physicians and nurses who, through the practice of their profession, are versed in the lore of human relations as well as in the discipline of our common scientific foundation.

MORE DON'TS

W. R. Jamieson, M.D., El Paso, Texas.

Don't pass instruments through the urethra until you have tried it ONCE on yourself.

Don't forget that a minimum of three grams of urotropin is necessary to produce sufficient formaldehyde to exert any appreciable influence on infection of the urinary tract. Keep the urine acid.

Don't forget that calcium gluconate is almost specific in gonorrheal epididymitis.

Don't let the disappearance of blood in the urine lull you into a feeling of false security. It is a danger signal and its source should be promptly investigated.

PSEUDOCYESIS

A comprehensive research into this too-little understood condition is being conducted by Dr. George D. Bivin, M.A., M.D., of Cleveland, Ohio. He requests from readers of this journal information regarding any cases which may have come under their observation. He offers to send a blank questionnaire indicating the points of information desired to any one who has personally treated one or more cases of spurious pregnancy. He asks that any such communicate with him, with regard to the following points:

1. Which type of questionnaire is desired,—a brief one or a comprehensive one? (2) How many cases of pseudocyesis have you treated? (3) For each case please write (a) How long was patient married before pseudocyesis? (b) Number of children patient had previous to pseudocyesis; (c) The approximate age of patient at the time of pseudocyesis; (d) Number of abortions patient had previous to pseudocyesis.

Address: George Davis Bivin, Box 272, Cleveland, Ohio.

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NOTICE REGARDING ARIZONA MEETING.

Doctors in Arizona, and interested doctors elsewhere, will please take note that no other program for the meeting in Prescott, June 7, 8 and 9, will be sent out. The full program is given below, and copies may be obtained at the time of registration in Prescott.

PROGRAM

Arizona State Medical Association
Prescott, Arizona
June 7, 8 and 9

Announcements

Registration headquarters will be at the Hassayampa Hotel. Every member, visitor and guest is requested to register promptly on arrival. Registration fee $5.

Scientific sessions will be held in the St. Michael Hotel

No address or paper before the Association, except those of invited guests, shall occupy more than twenty minutes. The opening discussions are limited to five minutes and general discussions to three minutes each. No one shall speak more than twice on the same subject.

Papers read before the scientific sessions shall become the property of the Association and shall be deposited with the secretary for publication in the official organ of the Association (Southwestern Medicine).

For the social entertainments, see the special announcements elsewhere in this program.

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* Fred G. Holmes, President-Elect, resigned due to ill health. Meade Clyne, Tucson, Vice-President Elect, will take office as President at this meeting.

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Program

Thursday, June 7, 9:30 A. M.

Invocation:
REV. FRANKLIN PARKER - - - - Prescott
Address of Welcome:
HON. CHARLES F. ROBB - Mayor of Prescott
GAIL D. ALLEE, *Officer in Charge* - - - - - Whipple Barracks
C. R. K. SWETMAN, *President* Yavapai County Medical Society
Response: G. H. FITZGERALD - - Tucson
Introduction of Vice-President-Elect, Meade Clyne by President N. C. Bledsoe - Tucson
President's Address:
MEADE CLYNE - - - - - - - - Tucson
ZEBUD M. FLINN (Guest) - - - - - Prescott
"Anorexia."
Discussion
WM. O. SWEEK and GUY C. FRENCH - Phoenix
"Intestinal Obstruction."
Discussion opened by
A. C. CARLSON, Jerome.
DUDLEY SMITH (Guest) - - - San Francisco
"The Menace of Rectal Suppositories—Care of Rectal Cases."
Discussion opened by
WILLARD SMITH, Phoenix.
ROY HEWITT - - - - - - - - - Tucson
"Proctoscopy as an Aid to Diagnosis."
Discussion opened by
V. G. PRESSON, Tucson.
E. CLARENCE MOORE (Guest) - - Los Angeles
"Pre-operative Preparation and Post-operative Care.
Discussion opened by
ROBERT FERGUSON, Bisbee.
R. F. PALMER - - - - - - - - - Phoenix
"Rating Permanent Partial Disability by Functional Measurements."
Discussion opened by
C. E. YOUNT, Prescott..
FRANK C. GOODWIN (Guest) Fraternal Delegate, El Paso County Medical Society, - El Paso
"A Bone Brace to Prevent Toe Drop in Paralytics."
Discussion opened by
R. D. KENNEDY, Globe.

Friday, June 8, 9 A. M.

EMILIO URRIOLAGOITA - - - - - - Nogales
"Some Observations on Goitre Operations."
Discussion opened by
V. A. SMELKER, Tucson.
HOWARD K. GRAY (Guest) Department of Surgery - - - - - - - - - - Mayo Clinic
"Surgery of the Biliary Tract."
Discussion opened by
GEORGE GOODRICH, Phoenix.
ARTHUR SMITH, D.D..S., M.D. (Guest) - Los Angeles
Plastic and Reconstructive Surgery of the Head."
Discussion opened by
E. PAYNE PALMER, Phoenix.
MAX PINNER, (Guest), Desert Sanatorium, Tucson
"Physiology of Pulmonary Collapse."
Discussion opened by
JOHN W. FLINN, Prescott.
HOWELL RANDOLPH - - - - - - - Phoenix
"Pneumothorax Treatment in Acute Lobar Pneumonia—Report on Eighteen Cases."
Discussion opened by
S. H. WATSON, Tucson.
CHAS. A. THOMAS - - - - - - - - Tucson
"Collapse Therapy in Tuberculosis Motion Film of Thoracoplasty."
Discussion opened by
VICTOR RANDOLPH, Phoenix.
SAMUEL D. INGHAM (Guest) - - Los Angeles
Prof. Nervous Diseases, University of Soutnern California.
"Neurologic Conditions Commonly Associated with Diabetes, Pellagra and Pernicious Anemia."
Discussion opened by
KIMBALL BANNISTER, Phoenix.
WARNER WATKINS - - - - - - - - Phoenix
"Roentgen Therapy of Inflammations."
Discussion opened by
EDWARD M. HAYDEN, Tucson.
A. E. GATTERDAM - - - - - - - - Phoenix
"Nasal Allergy."
Discussion opened by
R. A. WILSON, Tucson.

Saturday, June 9, 9:30 A. M.

LOUIS BALDWIN - - - - - - - - Phoenix
"Treatment of Secondary Anemia."
Discussion opened by
FRANK J. MILLOY, Phoenix.
ROBERT FLINN - - - - - - - - - Phoenix
"Treatment of Nephritis."
Discussion opened by
ROLAND DAVISON, Tucson.
R. K. SMITH - - - - - - - - - Tucson
"Post-partum Hemorrhage."
Discussion opened by
FLOYD B. SHARP, Phoenix.
GEORGE COLVARD (Guest) Fraternal Delegate, New Mexico State Medical Society, Deming, N. M.
"Rural Obstetrics—Delivery in the Home."
Discussion opened by
H. A. REESE, Yuma.
M. I. LEFF - - - - - - - - - Glendale
"Common Sense about Medical Ethics."
Discussion opened by
ORVILLE H. BROWN, Phoenix.

Schedule of Business Meetings

Council Meetings

Wednesday, June 6, 8 P. M.
Saturday, June 9, 8:30 A. M.

House of Delegates

Executive Session, Thursday, June 7, 8:30 A. M.
Open Session, Election, Saturday, June 9, 3:00 P. M.

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E. C. HOULE, *Southern District* - - - Nogales
JOHN E. BACON, *Medical Defense* - - Miami

House of Delegates

Cochise County - - - - - - -	2
Coconino County - - - - - -	1
Graham County - - - - - - -	1
Greenlee County - - - - - -	1
Gila County - - - - - - - -	2
Maricopa County - - - - - -	7
Mohave County - - - - - - -	1
Navajo-Apache County - - - -	1
Pima County - - - - - - -	7
Santa Cruz County - - - - -	1
Yavapai County - - - - - -	2
Yuma County - - - - - - -	0
Members of Council - - - - -	9
Total - - - - - -	35 Members

Entertainments

Thursday, June 7

8:30 P. M. Smoker. Hassayampa Hotel.
R. F. Palmer, Phoenix. Discussion of Medical Cooperation with The Arizona Industrial Commission.

Friday, June 8

7:00 P. M. Annual Banquet. Informal. Hassayampa Hotel.
G. T. Vinyard, Fraternal Delegate, Amarillo, Texas. Greeting from the Texas State Medical Association.
Mrs. C R. Swackhamer, President. Report of Women's Auxiliary.
Dance.

Program for the Medical Auxiliary

Thursday, June 7

1:00 P. M. Luncheon at the Hassayampa Country Club.

Friday, June 8

Auxiliary Meeting at Monday Club.
2:00 P. M. Drives.
7:00 P. M. Annual Banquet. Informal. Hassayampa Hotel.

Saturday, June 9

9:00 A.M. Auxiliary Meeting at Monday Club.

PRINCE ALBERT MELICK
(Williams, Ariz.)

Dr. P. A. Melick, a charter member of the Coconino County Medical Society, a practitioner for thirty years or more in northern Arizona, died about April 20th, in Los Angeles. Dr. Melick was sixty-four years of age, a graduate in 1892 of Beaumont Hospital Medical College, of St. Louis, and was licensed in Arizona in 1903, although located in the state prior to that date. The entire Association will share with his confreres of Coconino County their sorrow at the passing of another pioneer physician of the state.

WILLIAM CLARENCE MATTHEWS
(Roswell, N. M.)

Information comes to us of the death of Dr. Wm. C. Matthews, of Roswell, N. M., which occurred suddenly on March 6th, from angina pectoris Dr. Matthews was a member of the Chaves County and the New Mexico State Medical Societies. He was a graduate of the National University of Arts and Sciences Medical Dept., St. Louis, in 1913. He was licensed in New Mexico in 1914. He entered the Medical Department of the Army and served during the World War. He was a valuable and esteemed member of the medical profession of his community.

ALBERT JOHN HOSKINS
(Albuquerque, N. M.)

Dr. A. J. Hoskins, a well known figure in Veterans' Administration work in Arizona and New Mexico, succumbed to a sudden heart attack, the latter part of April, in Albuquerque, N. M. He had recently been transferred to that field from Phoenix, where he was, for several years, Director of Medical Work for World War Veterans. While in Phoenix he became well known to the medical profession and left many friends behind when he was transferred. Prior to being established in Phoenix, he was at Veterans' Hospital No. 55, at Fort Bayard, N. M.

CANCER CONTROL

A major problem in medicine is the control of cancer, as distinguished from research into the causes of cancer and its treatment. The Bulletin of the American Society for the Control of Cancer is a very useful periodical for every physician, because cancer is so universal that every active practitioner must come in contact with it frequently. This Bulletin appears monthly and contains a number of short articles written by distinguished authorities in the field of cancer therapy and cancer research. It offers at a subscription price of $1.00 per year, an easy and practical way for the physician to keep abreast of cancer control progress. A complimentary copy of the Bulletin will be sent to any physician, on request addressed to the American Society for the Control of Cancer, 1250 Sixth Ave., New York City.

NEW JOURNAL FOR DIGESTIVE DISEASES

No. 1, Volume 1, of the American Journal of Digestive Diseases and Nutrition has been received from the office of publication in Fort Wayne, Ind. Dr. Frank Smithies, of Chicago, is Editor-in-Chief, with an impressive Editorial Council. The material is arranged in ten sections, including Clinical Medicine, Experimental Physiology, Nutrition, Roentgenology. Therapeutics. Abdominal Surgery, Surgery of the Lower Colon and Rectum, Editorial, Book Reviews and After Hours. The first three articles under Clinical Medicine are on Amebiasis, with a fourth article on treatment of the same condition in the Therapeutic Section.

We look for a very cordial reception of this journal, if its future issues are as practical and timely as this one.

THE WOMAN'S AUXILIARY

To the Arizona State Medical Association.
MRS C. R. SWACKHAMER, President.
MRS. JOHN C. WILSON, Willcox,
Press and Publicity Chairman.

The National News Letter of April is charged with inspiring activities of the various states. Too bad we can not print it all, but that gives our members a concrete reason for reading the BULLETIN of the A. M. A., which usually has a very interesting and instructive letter.

During this month Child Welfare programs were sponsored all over the country, and the April number of our own Public Health news carried a timely article on the control, prevention and cure of whooping cough (pertussis). Can't we members spread the glad tidings that the use of vaccine prevents as well as cures this dread disease?

Arkansas supplies milk to undernourished children. Virginia sponsored a physical fitness contest among the school children. Oklahoma sponsoring health activities in the public schools. Oregon heard an interesting paper on "The constructive work for Infantile Paralysis at the Warm Spring Foundation;" also sponsored an essay contest, "Heroes and Health," in the high schools; anohter Oregon Unit a state survey of physically handicapped children. West Virginia sponsored children's benefits.

Meetings have been held by the Maricopa and Pima County Units which were very well attended and some fine constructive work reported. Maricopa also elected officers.

Committees are being appointed for our State Convention, which as you all konw will be held in Prescott June 7th, 8th and 9th, and we had hoped to have a complete program accompanying this article, but it may appear yet, as the women in charge of arrangements have promised that if they get all details figured out before the Souhtwestern Medicine goes to press, they would rush it in direct, and here's hoping it appears.

The National Meeting will also be in June—11th, 12th, 13th, 14th and 15th, and each day is full of business, recreation and sociability, and we will not have another news letter until after the meeting.

For the Good of the Order let's all pledge ourselves to give our President prompt replies to the letters she will have to write in order to culminate plans for our State Meeting. Every chairman will needs do her part in order that we may forge ahead and achieve most next year. Those of us who are working all the time realize how our State Auxiliary has grown and can only hope for its constant and vigorous expansion.

Now in closing may I quote Mrs. Blake: "All our work has been done with the one aim in our minds, namely, the advancement of our husbands' profession and our husbands, the family doctors of our counties and states."

Information reaches us that Dr. George W. Hawley, of Bridgeport, Conn., designer of the Hawley table, has been discharged from Glockner Sanatorium and Hospital, at Colorado Springs, after a three years' successful fight against tuberculosis. While there he perfected a much more improved form of his table, with the addition of shock-proof fluoroscopic and radiographic attachments, which will permit the reduction of fractures under direct observation. The original Hawley table, designed twenty years ago, is now in the Smithsonian Institute in Washington, D. C.

Dr. Fred G. Holmes, of Phoenix, president-elect of the Arizona State Medical Association, is having the experience of having to take a dose of his own medicine. Finding himself with suggestive symptoms, physical and x-ray examinations revealed an early and rather acute tuberculosis localized in one upper lobe. He has gone to bed and after activity has subsided, he will devote the summer to the preparation of a book designed to give information to patients regarding the modern management and treatment of tuberculosis. He expects to resume his practice some time in the fall. In the meanwhile, this is being cared for by Drs. Howell and Victor Randolph, his associates.

Dr. William V. Whitmore, of Tucson, has presented to each of three universities with which he has been associated, a bound volume of his "Papers, Addresses, Sketches and Toasts." These schools are Bates College, University of Southern California and the University of Arizona. Among these are included his papers, addresses and toasts before the annual meetings of the Arizona State Medical Association during his thirty-seven years' affiliation with that organization. For more than a quarter of a century, Dr. Whitmore was asked to make the nominating speech each year for the candidates previously decided upon in caucus for the office of president. His speeches became a feature of the annual meeting and will always be remembered by the "old timers" of the Association. His memoirs will have a large place in the forthcoming "History of Arizona Medicine."

The Gynecean Hospital Institute of Gynecologic Research of the University of Pennsylvania, is conducting an intensive study of families into which congenitally malformed individuals have been born.

Special interest centers in families in which malformations have appeared in two or more children. Physicians who have knowledge of any such families are urged to communicate with:

DR. DOUGLAS P. MURPHY,
Gynecean Hospital Institute,
University of Pennsylvania,
Philadelphia, Pa.

BOOK REVIEWS

MEDICAL CLINICS OF NORTH AMERICA (Cleveland Clinic Number, January, 1934). Vol. 17, No. 1, octavo of 253 pages, with 53 illustrations. Per clinic year July, 1933 to May, 1934, paper $12.00, cloth $16.00 net. W. B. Saunders Company, Philadelphia and London.

This number of the Medical Clinics maintains the high standard of previous numbers and the subjects discussed are well chosen and cover a wide range. This volume should be of especial interest to those giving attention to general practice of internal medicine. —H. P. M.

ALLERGY IN GENERAL PRACTICE: By Samuel M. Feinberg, M. D., F. A. C. S.; Illustrated with 23 engravings and a colored plate; Philadelphia; 1934; Lea and Febiger.

Doctor Feinberg places allergy where it strictly belongs—with the general practitioner. Naturally, as in every other field, various cases will need attention from the expert. The vast majority, however, the general man will be able to treat successfully; i. e. he will be able to treat these cases successfully when he recognizes them early and learns the proper treatment.

If and when a patient develops a small area of angioneurotic edema and has been eating a considerable amount of a certain food, it may be that eliminating that food from the diet will do away with the trouble; or it may be necessary also to prescribe a digestant mixture to be taken with the meals; or again it may be necessary in addition to all this to eliminate all foods excepting one or two or three and then to add others one at a time. These procedures may be carried out by the busy general practitioner as well as by the allergist. When results along these lines fail, skin testing may be necessary. The allergist with his expert knowledge will need to be called in for many of the difficult cases, especially where skin testing is necessary, as the interpretation of these tests requires a vast experience

This book is prepared with the idea of giving the general practitioner the requisite information for successfully treating a great many allergic conditions.

The mere fact that a patient has an infection of one type or another does not preclude his also having an allergic condition. The allergy may contribute more to the individual's discomfort than does his primary condition. The tragedies or near tragedies of protein sensitization, such as severe asthma from a food or pollen, as death from a serum injection, or a terrible eczema from foods, have attracted more attention than have the milder cases such as intestinal flatulence, mild pruritis, hives, mild eczemas, allergic cystitis, etc., even though there may be 1000 mild allergic cases to one severe one. It is well though to remember that the severe cases grow out of the mild cases; mild cases easliy go unrecognized.

The book has 339 pages including index, preface, foreword, and text. The author has attempted to

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ANNOUNCES . . .

Dr. Charles Robert Elliott
Treatment Machine

See These Articles on Elliott Technic in Pelvic Inflammatory Diseases

Holden and Gurnee, Am. Jour. Obs. & Gyn. July, 1931.
Holden and Sovak, Am. Jour. Obs. & Gyn. Nov., 1932.
Counsellor, Jour. A.M.A. Sept. 16. 1933.
Graham, Am. Jour. Surg. June, 1933.
Stone, Am. Jour. Physical Therapy, April, 1932.
Jacobs, St. Louis Med. Soc. Bulletin, Discussion by Vaughan and Gellhorn, June 5, 1931.
Holliday, Jour. of Dental Research, Dec. 1932.
Shullman, Jour. of Med. Soc. of New Jersey, 1933.

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give the reader a general conception of the entire problem. The general man may be a bit confused at his first reading of the text, but certainly no more than he was at his first introduction to any of his medical texts.

If a physician will study Feinberg's book, he will know the actual status of allergic disease today and be in a position to deal successfully with at least many of the milder cases.

The publisher's art is beautifully exemplified in this book. —O. H. B.

Arizona Public Health Association

SEVENTH ANNUAL MEETING
Prescott, Arizona, June 5-6, 1934

OFFICERS

President, R. B. Durfee, County Health Officer, Bisbee.

First Vice-President, Mrs. Carolynn Whiting, R. N., Maricopa County Health Unit, Phoenix.

Second Vice-President, George C. Truman, M. D., State Superintendent of Public Health, Phoenix.

Secretary-Treasurer, Jane Rider, Director, State Laboratories, Tucson.

Executive Committee, C. E. Irvin, M. D., Phoenix; O. W. Fowler, Sanitary Inspector, Yuma; D. W. Fountain, Chief Inspector, Phoenix; P. J. Martin, City Water Superintendent, Tucson.

TUESDAY, JUNE 5, 1934.

9:00 A. M. Registration, Hassayampa Hotel.

GENERAL SESSION

R. B. Durfee, M. D., President, presiding.

10:00 A. M. Address of Welcome: Bert Tilton, Mayor of Prescott.

Address. Honorable B. B. Moeur, Governor of Arizona.

Address, George C. Truman, State Superintendent of Public Health.

Present Day Opportunities for the Practicing Medical Profession in the Field of Public Health: W. P. Shepard, M.D., Asst. Secy. Metropolitan Life Insurance Company, San Francisco.

The Menace of Spray Residue: H. C. Moore, Chief Los Angeles Station, U. S. Food and Drug Administration.

Legal Aspects of Dairy Inspection in Arizona: P. H. Brooks, Asst. Attorney General.

Examination of Food Handlers for Communicable Diseases: C. N. Boynton, Pathological Laboratory, Phoenix.

Survey of Cross Connections in City of Tucson: P. J. Martin, City Water Superintendent.

Introduction of members and guests.

Announcement of local arrangements.

12:30 P. M. Luncheon. Meeting of Executive Committee.

2:30 P. M. Health Work in the Public Schools: H. E. Hendrix, Superintendent of Public Instruction.

C. W. A. Program for Public Schools: Constance F. Smith, County School Superintendent.

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of Raw Water Supplies: F. C. Roberts, Jr., State Sanitary Engineer.

Relation Between Emergency Relief Administration and Public Health: Florence M. Warner, Secy. Arizona Board of Public Welfare.

Child Welfare Program of Department of Labor: Martha Elliott, M. D., U. S. Children's Bureau, Washington, D. C.

Controlling Algae in Swimming Pools with Copper Paint: J. R. Marston, Chemist, United Verde Copper Company.

Recent Epidemiological Trends in Childhood Tuberculosis: Max Pinner, M. D., Desert Sanatorium, Tucson.

The Diagnosis of Active Tuberculosis in Childhood: John W. Flinn, M. D., Pamsetgaaf Sanatorium, Prescott.

Childhood Tuberculosis in Tucson: L. H. Howard, M. D., City Health Officer, Tucson.

2:00 P. M. Dairy Inspectors' trip to visit dairies in vicinity of Prescott.

4:30 P. M. Visit to Prescott and Atchison, Topeka and Santa Fe Water Works at Del Rio.

WEDNESDAY, JUNE 6, 1934
GENERAL SESSION

9:30 A. M. Progress of Health Unit in Gila County: A. B. Ingles, Director, County Health Unit, Globe.

Problems of the County Health Unit: Warren F. Fox, Director, Imperial County Health Unit, El Centro, California.

Laboratory Examination of Suspected Cases of Dysentery: Mildred Wooly, Desert Sanatorium, Tucson.

Typhoid Prophylaxis: G. Morris, M. D., Director, Pima County Health Unit, Tucson.

Experience with One Dose Alum Precipitated Diphtheria Toxoid: Hugh F. Stanton, M. D., State Epidemiologist, Phoenix.

Address: J. L. Pomeroy, M. D., County Health Officer, Los Angeles, California.

Address: P. J. Covington, M. D., Field Representative International Health Institute, Rockefeller Foundation.

Brief Talks by Former State Health Officers.

DAIRY INSPECTORS' SECTION.
12:00 M. to 4:00 P. M.

Meeting with Yavapai County Dairymen.

Value of Bringing the Standard Milk Ordinance to Date: D. W. Fountain, City Milk Inspector, Phoenix.

Control of Bang's Disease in Dairy Herd: C. T. Guilfoyle, D. V. S., State Veterinarian.

Some Important Problems the Dairy Industry Must Solve: Clyde Rowe, Agricultural Extension Service, University of Arizona.

Informal Discussion of Dairy Problems.

2:30 P. M. Public Health Nurses' Executive Session.

Carolynn S. Whiting, R. N., Maricopa County Health Unit, presiding.

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Ash—late Feb., March.	Junipers—March.
Rabbit Bushes—Mar., Apr.	Box Elder—April.
Bermuda Grass — March, Nov.	Scrub Oak—May, June.
Johnson Grass — March Nov., relieved by Bermuda ext.	Russian Thistle — June, Aug.
Careless Weed—May, Oct.	Careless Weed—June., Sep.
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The Public Health Nurse: Mrs. Ruth McGregor, R. N., Cochise County Health Department.

Public Health Work in Arizona from the Point of View of the Physician and Taxpayer: David M. Davis, M. D.

The Problem of Trachoma: Anna Isreal Nettle, M. D., U. S. Indian Service, Parker.

Questions and Answers from the N. O. P. H. N.

Business Meeting.

Election of Section Officers.

3:30 P. M. Conference of All Public Health Officers.

SANITARY SECTION

9:30 A. M. Sterilization of New Water Supply at Grand Canyon: E. Nelson, Chief Engineer.

Improving Prescott's Water Supply: A. J. Kline, City Engineer.

Results of the Sanitary Survey of the Colorado River in the Vicinity of Yuma: Kenneth Sawyer, Engineer.

Determining the Deterioration of Mains in a Water Distribution System: John A. Carollo, Consulting Engnieer, Phoenix.

Discussion: L. R. Burch, Office Engineer, Tucson Water Department.

Demonstration of Laboratory Tests for Sewage Treatment Plants: J. Pickett, Chemist, Phoenix Sewage Treatment Plant, and Jane H. Rider, Director, State Laboratories.

12:30 P. M. Luncheon and Annual Meeting, Arizona Sewage Works Association.

Some Practical Applications of Coagulants: R. A. Stevenson, Chemist, Great Western Electric-Chemical Co., San Francisco, California.

2:30 P. M. Decomposition of a Sewer Line: G. W. Marx, City Sanitary Engineer, Tucson.

Imhoff Tank Operation at Glendale: Charles Hircock, Water Department, Glendale.

Operating an Activated Sludge Plant: Hillyard Hall, Plant Operator, Grand Canyon.

Two Years' Experience as an Operator: D. Mauzey, Operator, Phoenix Sewage Treatment Plant.

Some Sewage Disposal Problems Presented to the State Board of Health: F. C. Roberts, Jr., State Sanitary Engineer.

Plans for Public Works Administration in Arizona: Howard S. Reed, State Engineer, Public Works Administration.

Special Notice: Arrangements will be made for a trip to the Water Works on the South Rim of Grand Canyon, if any of the members are interested.

6:30 P. M. Dinner and Annual Meeting of the Arizona Public Health Association, Hassayampa Hotel. John W. Flinn, M. D., Toastmaster.

WANTED — By Nurse-stenographer, position in physician's office or hospital historian. References. Address Box M, Southwestern Medicine.

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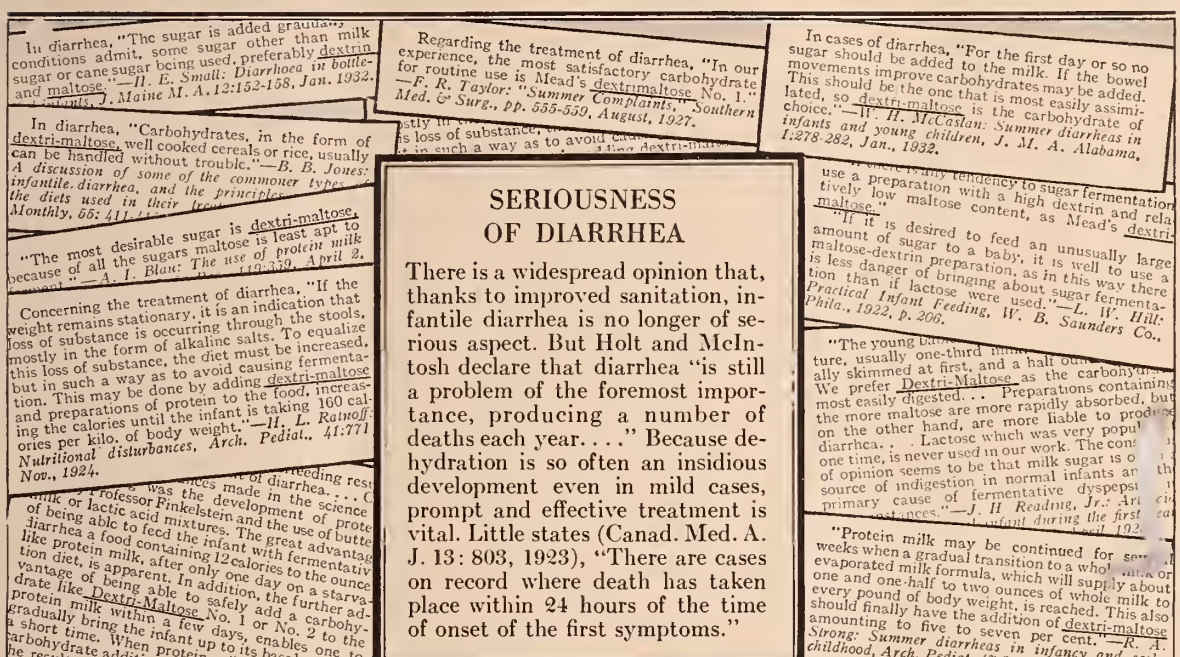
DIARRHEA

"the commonest ailment of infants in the summer months"

(HOLT AND McINTOSH: HOLT'S DISEASES OF INFANCY AND CHILDHOOD, 1933)

One of the outstanding features of DEXTRI-MALTOSE is that it is almost unanimously preferred as the carbohydrate in the management of infantile diarrhea.


In diarrhea, "The sugar is added gradually, conditions admit, some sugar other than milk sugar or cane sugar being used, preferably dextrin and maltose."—H. E. Small: Diarrhoea in bottle-fed infants, J. Maine M. A. 12:152-158, Jan. 1932.
Regarding the treatment of diarrhea, "In our experience, the most satisfactory carbohydrate for routine use is Mead's dextrimaltose No. 1."—F. R. Taylor: "Summer Complaints," Southern Med. & Surg., pp. 555-559, August, 1927.
In cases of diarrhea, "For the first day or so no sugar should be added to the milk. If the bowel movements improve carbohydrates may be added. This should be the one that is most easily assimilated, so dextri-maltose is the carbohydrate of choice."—W. H. McCaslan: Summer diarrheas in infants and young children, J. M. A. Alabama, 1:278-282, Jan., 1932.
In diarrhea, "Carbohydrates, in the form of dextri-maltose, well cooked cereals or rice, usually can be handled without trouble."—B. B. Jones: A discussion of some of the commoner types of infantile diarrhea, and the principles underlying the diets used in their treatment, Internat. Clinics, Monthly, 66: 41[illegible]
SERIOUSNESS OF DIARRHEA
There is a widespread opinion that, thanks to improved sanitation, infantile diarrhea is no longer of serious aspect. But Holt and McIntosh declare that diarrhea "is still a problem of the foremost importance, producing a number of deaths each year. . . ." Because dehydration is so often an insidious development even in mild cases, prompt and effective treatment is vital. Little states (Canad. Med. A. J. 13: 803, 1923), "There are cases on record where death has taken place within 24 hours of the time of onset of the first symptoms."
"The most desirable sugar is dextri-maltose, because of all the sugars maltose is least apt to [illegible]."—A. I. Blau: The use of protein milk [illegible], 119:339, April 2,
Concerning the treatment of diarrhea, "If the weight remains stationary, it is an indication that loss of substance is occurring through the stools, mostly in the form of alkaline salts. To equalize this loss of substance, the diet must be increased, but in such a way as to avoid causing fermentation. This may be done by adding dextri-maltose and preparations of protein to the food, increasing the calories until the infant is taking 160 calories per kilo. of body weight."—H. L. Ratnoff: Nutritional disturbances, Arch. Pediat., 41:771 Nov., 1924.
"The young [illegible] ture, usually one-third [illegible] ally skimmed at first, and a half [illegible] We prefer Dextri-Maltose as the carbohydrate most easily digested. . . Preparations containing the more maltose are more rapidly absorbed, but on the other hand, are more liable to produce diarrhea. . . Lactose which was very popular at one time, is never used in our work. The consensus of opinion seems to be that milk sugar is one of the source of indigestion in normal infants and the primary cause of fermentative dyspepsias."—J. H. Reading, Jr.: Artificial feeding during the first [illegible]
"Protein milk may be continued for several weeks when a gradual transition to a whole milk or evaporated milk formula, which will supply about one and one-half to two ounces of whole milk to every pound of body weight, is reached. This also should finally have the addition of dextri-maltose amounting to five to seven per cent."—R. A. Strong: Summer diarrheas in infancy and early childhood, Arch. Pediat. 47:344-354, June, 1930.
"It should be remembered that a [illegible] of lactose may cause diarrhoea. If a [illegible] it is better to [illegible] of sugar be required it is better to [illegible] centage of sugar such as Mead's Nos. [illegible] it by dextri-maltose, such as Mead's Nos. [illegible] where the maltose is only slightly in excess [illegible] dextrins, thus diminishing the possibility [illegible] cessive fermentation."—W. J. Pearson: [illegible] practices in infant feeding, Arch. Pediat., 42:743-760, Nov., 1925.
In cases of malnutrition and indigestion, "The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. When there is a tendency to looseness, I have used to [illegible] ounce of dextri-maltose, for [illegible] ration known as 'dextri-maltose and [illegible] hydrates; . . . of cocoanut oil mixture [illegible] of the stools, carbohydrate must be [illegible] ein milk within a reasonable time [illegible] void collapse."—G. J. Feldstein: Infants and children, Arch. Pediat., [illegible] 1933.
"When sugar causes diarrhoea one can change the form of it. Mead's Dextrimaltose in small doses is more quickly absorbed and so superior to castor [cane] sugar. Lactose is expensive and seems not to be better than castor sugar."—H. B. Gladstone: Infant Feeding and [illegible]
" . . . I begin to add carbohydrates slowly, by replacing ¼ ounce Casec every two days with ¼ ounce of Dextri-Maltose, preferably Dextri-Maltose Number one. As a rule, this is tolerated. When one ounce of Dextri-Maltose is used, the Casec, of course, should be discontinued."—H. Reed: The etiology and [illegible]
"Milk-sugar, which has been so extensively used in the past, should never be used where there is any digestive disturbance. It is not as easily digested as either cane-sugar (granulated sugar) or dextri-maltose. The latter is the best of all sugars to use, especially if there is any tendency to looseness of the bowels."—A. Brown: The Normal Child; Its Care and Feeding, F. D. Goodchild Company, Toronto, 1923, p. 120.
"After the preliminary short period of starvation, protein milk should be used. . . . When the diarrhoea has been sufficiently checked, dextri-maltose may be added and gradually increased until from 4 to 6 tablespoons are being used."—W. L. Denney: Acute nutritional disturbances of infancy. Univ. West. Ontario M. J. 2:132-137, April, 1932.
For cases of fermentative diarrhea, ". . . the ideal plan of treatment would be to give a food which is low in sugar (the food which that group of organisms thrive on) and high in protein. Calcium caseinate milk accomplishes this purpose. In our series of cases, we found it was necessary to use the casein calcium for from 5-8 days; we then stopped it and added dextri-maltose to the formula."—A. G. DeSanctis and L. V. Paider: The value of calcium caseinate milk in [illegible] diarrhea, Arch. Pediat. [illegible]

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ADDRESS OF PRESIDENT

MEADE CLYNE, M. D.
Tucson, Ariz.

(Delivered at the annual banquet of the Arizona State Medical Association and Ladies' Auxiliary, at the Forty-third Annual Session of the Association, held at Prescott, Arizona, June 7, 8 and 9, 1934).

There never has been a time, in the history of the medical profession, when the necessity for a powerful, cohesive organization was any more important than at present. There is a strong tendency, on the outside, for a great many people who know little or nothing of the practice of medicine, to attempt to tell us exactly what to do in that practice. There is a strong tendency toward state medicine, governmental medicine, and organization medicine, as apart from the interest of the individual practitioner. If medical men are willing to accept that tendency, well enough; if we believe on the other hand, that we have performed our duties fairly well to society and that we have certain rights to be protected, then it behooves us more closely to unite our organization forces.

As medical men, naturally we are altruists, and we have been inspired with a desire to serve our fellow men; I would not say one word to overcome that thought and that tendency of medicine, but I believe that in the past perhaps too much emphasis has been put on the subject of what we owe the people, and now the time has come when medical men must let the people know what they owe to medicine.

A generation ago, for instance, an average doctor in a small community could make a fairly respectable living from the treatment of a relatively few diseases. In a country community, typhoid, malaria, the summer bowel troubles and the ordinary infantile complaints would keep an average man fairly busy, with a fairly decent income. Advances in medicine of which we are proud, have wiped out that source of income to physicians, and yet we have gladly made the sacrifice. I might say that there is no profession, and I do not except the ministry in this remark, that has done more for the welfare of the masses of people of this world, without compensation or selfish thought, than the medical profession has done, and I believe it is up to us sometimes now, not simply to discuss what we owe to the public, but radically to call the attention of the public to what medicine has given to them and what is due in return for medicine.

In many of the cities today the tendency of social workers and other investigators is to expect that our county hospitals, supported by taxation, intended for service to the poor people of the communities, the charity patients, shall provide also a charity service for people who are abundantly able to pay. Great care should be exercised by doctors in aiding the establishing of free clinics of any kind—such as, children, cancer, tuberculosis; to see that none but the deserving poor are treated, and all others are returned to their family doctors. The Cleveland Academy of Medicine has worked out a plan, in cooperation with the public dispensaries, whereby patients who require medical attention are saved for the family physician if they have once been treated by him, or referred to a phyisican if they can pay anything for the treatment. The plan is worthy of investigation by every local society.

An exhaustive report of the plan can be found in Modern Hospital, March, 1934.

There is a tendency in many communities for health authorities to undertake wholesale vaccination and diagnosis of conditions of all kinds, of school children from families that can well afford to pay the family doctors for those services. By following the suggestions of the Kellogg Foundation, as did the medical professon of the city of Detroit, where the family doctor is allowed to keep in contact with the children in the family, this insidious inroad into the general practice of medicine can be controlled, at least to some degree.

During the past year the Arizona Industrial Commission has cut from three-fourths to one-half in some instances the fees for services rendered by doctors to injured employees coming under its jurisdiction. It is to be hoped that this is a temporary measure only, designed to meet an emergency and with a tentative time limit; if not, it should be resisted strenuously for three reasons: Because the fee fixed by the Commission to a great degree sets the price for similar service in general practice; because lowering of fees has a tendency to lower the standard of service rendered; and, because it materially affects the income of the doctor. It would seem, that for the best interests of all concerned,—the patient, the Commission, and the doctor,—the accepted standard for fees should be the same as that which prevails in the community for similar treatment. In a recent survey by the American College of Surgeons it was shown that this schedule has been adopted by the large majority of states, and in some states is incorporated in the act creating the Commission. It seems to me, that a committee should be appointed from the State Medical Association to confer directly with the Industrial Commission in an attempt to adjust our differences.

The Principles of Ethics of the American Medical Association emphasizes the duty of the physician to aid in educating the public properly regarding the facts of medicine. Thus the medical profession secures public cooperation in the prevention of epidemics and in the control of disease. The manner in which public education shall be carried on has been the subject of acrimonious discussion at various times, probably, no doubt, because customs vary in different communities and because of the lack of any written code providing a detailed consideration of the subject.

Considerable clarity is brought into the situation by the recent adoption, through the Comitia Minora of the Medical Society of the County of New York and the Council of the New York Academy of Medicine, of a series of principles governing contact of phyisicans with the public through the press, the lecture platform, lay periodicals and the radio. The necessity for proper publicity and education is recognized in the preamble. Moreover, legitimate news of the election of officers, opening of hospitals and awarding of prizes is recognized as desirable, and the use of a physician's name in this connection is not considered reprehensible. The committee does condemn exploitation or advertisement of individuals featuring their comings and goings, their connections, and their achievements and honor—in other words, the kind of publicity most sought by the group characterized by experienced newspaper men as "publicity hounds."

The following regulations have been adopted by both organizations with the understanding that failure to comply will make the offender liable to disciplinary measures by the Medical Society of the County of New York, the Academy of Medicine, or both:

1. A physician shall not directly or indirectly seek publicity for himself tending to call attention to his professional attainments or activities.

2. A physician shall not issue testimonials or endorsements calculated to promote the sale to the lay public of any product in any way related to health or the prevention and cure of disease.

3. A physician shall not issue, or authorize for publication, his photograph in connection with any matter affecting his or her professional relationship with the public.

4. When reading a paper over the radio, neither the announcer nor the physician should give more than one of his titles, nor give notice of his own medical experience or accomplishments.

Our New York colleagues have here taken an advanced and noteworthy step in establishing the relationships of modern medicine to the public. It is conceivable that experience, the changing of customs and the passing of time may make necessary some modifications in these principles. Nevertheless, their codification provides a basis for study and will do much to establish proper medical education more widely. Those who have looked askance at all such efforts may view with fear and trembling this legalization of medical publicity; those who have taken part in the progress in this field, already made by many county and state medical societies, will see in this code an attempt to bring order into a situation where chaos has been an obstruction.

It would seem to me that much good would come, particularly from an educational standpoint, if some such code were adopted by our county medical societies here in Arizona.

INDICATIONS FOR SURGERY IN THE TREATMENT OF DISEASES OF THE THYROID.

HAL W. RICE, M. D.
Morenci, Ariz.

(Read before the nineteenth annual session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

Indications for surgery in the treatment of any condition are those symptoms and signs which demand surgical interference for relief. In the several types of diseases of the thyroid gland, such indications depend largely upon two factors, namely, (1) the relative inadequacy of other lines of treatment, and (2) comparative safety of the surgical procedure.

The clinical division of diseases of the thyroid into four groups is the simplest: (1) infections, (2) toxic and (3) non-toxic goiter, and (4) malignancy.

INFECTIONS

Acute infection of the thyroid is rare, and may occur as an independent process, but more commonly is associated with a generalized pyemic condition, such as in typhoid or the puerperal fevers. The organisms very probably reach their destination by way of the blood stream. In addition to systemic symptoms of bacterial invasion, one sign, which is quite constant and characteristic, is a notable induration of the gland. This hardness is due to increased tension within the non-elastic capsule, and may involve the entire gland or be limited to a part of one lobe. Pain, especially painful deglutition, is an early symptom, and localized tenderness is pronounced. Mild cases usually subside in from two to seven days, requiring nothing but local applications of heat or cold, and symptomatic treatment.

In acute thyroiditis with severe symptoms, where the stony hard area is clearly defined, the treatment indicated is surgical. The gland is exposed, and when pus is found, drainage is established. If necrosis without pus formation is encountered, the necrotic area should be excised and drained. Prognosis is excellent, if no more than simple drainage, or removal of gangrenous tissue, is quickly accomplished. Attention to any tumor of the gland should be postponed until a later date.

Acute infectious processes generally leave the gland unimpaired as to function. It is not unusual, however, for acute hyperthyroidism to follow acute thyroiditis; or a state of true myxedema may result when a very severe infection terminates in extensive necrosis and sloughing of parenchymatous tissue.

Following are two case reports:

In July, 1921, a married woman, 31 years of age, was seen, whose complaint was a painful, tender neck, associated with fever and general malaise. For about two years she had been treated medically, elsewhere, for a mild hyperthyroidism. Four weeks before her present illness she had suffered an acute flare-up of a chronic pelvic infection, recovery from which had been apparently good. Examination disclosed diffuse tenderness of a nodular thyroid, which was but slightly enlarged and moderately indurated. Recovery from acute symptoms was complete in 4 or 5 days, symptomatic treatment alone being required. But the pre-existing hyperthyroidism seemed to be stimulated into much greater activity, becoming steadily worse until thyroidectomy was performed three months later.

In March, 1929, I saw in consultation a married woman 33 years of age. For eight days she had been confined to bed with a "stiff neck," much resembling acute torticollis, except that the complaint was accompanied by a septic type of fever (between

100° and 104°) with corresponding constitutional symptoms. She had three children. A medium-sized nodular goiter had been present since her last pregnancy, four years previous. Objective findings were negative but for decided muscular resistance in the region of greatest tenderness, just above the attachment of the left sternomastoid to sternum and clavicle. The true nature of the condition was not suspected until surgical exploration discovered an abscess of the lower pole of the left lobe of the thyroid. Drainage resulted in prompt recovery. There were no sequelae. No exciting cause of the infection was demonstrable, or obtainable from the history.

Of the chronic infections, tuberculosis and syphilis are only occasionally encountered. The former is probably never primary, though typical tubercles can be found in the thyroid in from 4 per cent to 10 per cent of tuberculous individuals. The disease does not excite metabolic disturbances, since the cellular proliferation in tuberculosis is of connective tissue rather than of epithelium. The involvement is generally so slight as to escape detection until found at autopsy. A much rarer form, called struma tuberculosa, manifests hard nodules, difficult to differentiate from cancer. For this reason excision of the nodule for examination is indicated.

Syphilitic gummata may appear in the thyroid, causing some confusion in diagnosis. The treatment, of course, is medical.

There is also a chronic infection, peculiar to the thyroid, which is often (almost invariably) diagnosed carcinoma. It is a low-grade, idiopathic inflammatory affection of the gland, first described by Riedel in 1896, and known as Riedel's iron-hard struma. A rare disease, its chief importance lies in its close clinical resemblance to malignancy. Inasmuch as it is impossible to differentiate clinically from cancer, surgical exploration is always advisable. If there are pressure symptoms arising from this hard, fibrous struma, only enough of the tumor mass is removed to free the trachea, ordinarily the isthmus and a small adjacent portion of each lobe.

GOITER

Included in the group of toxic goiters are all those exhibiting evidences of thyroid hyperfunction, whether the pathology is purely hyperplasia (exophthalmic goiter) or simple or nodular goiter with secondary hypertrophic changes. The seriousness of toxic goiter can be appreciated only when we realize that it gravely affects the cardiovascular and central nervous systems; that the tendency is for the damage wrought to these vital systems to become progressively greater and more difficult to repair. There is probably no disease in which treatment is less stereotyped, none in which each case is more a law to itself, than thyrotoxicosis. Beginning in the larger clinics the idea has grown that this condition calls for combined surgical and medical treatment; that, alone, either method will fall short of obtaining the desired result. Patients in this group seek relief from weakness, shortness of breath, palpitation and tachycardia, easy exhaustion, mental irritability, tremor, menstrual disturbances, and exophthalmos. Such complaints respond most promptly and permanently to surgical treatment, preceded and followed by careful medical supervision. Until recently, preliminary ligation of the superior thyroid arteries was indicated in the more toxic cases. But in the last decade, the administration of iodine (Lugol's solution) for a short time previous to thyroidectomy, has obviated the necessity for ligation in all but those few instances (less than 5 per cent) who, in spite of iodine-therapy, maintain a basal metabolic rate of 50 or above. The pre-operative use of iodine has doubtless been the greatest single agent in lowering operative mortality. An average of 40 drops of Lugol's daily is given by mouth for from eight to fifteen days. At Johns Hopkins Hospital and other large clinics, "all patients with signs and symptoms of hyperthyroidism and that have an elevation of the basal metabolic rate, are treated before operation wtih Lugol's solution, whether or not the goiterous enlargement be diffuse or nodular, similar beneficial results being obtained in both types of cases."

The surgical attack upon the gland itself for relief of hyperthyroidism should have for its object greatly to decrease the amount of thyroid tissue. It should never be in the nature of emergency surgery. On the other hand, when the operation has the ear-marks of an emergency, many fatalities are bound to follow. Operative risk assumed by the hyperthyroid has been reduced in the clinics of this country to between 1 and 2 per cent, which, as C. H. Mayo points out, is less than in other dis-

eases of similar severity. The presence of congestive heart failure often makes risk of operation prohibitive. If, however, with appropriate treatment, including physiological rest, iodine, and sedatives, cardiac compensation should be restored to any reasonable degree, the risk of partial thyroidectomy will probably be less than if operation is not performed. According to Lahey, "if there is any uncertainty as to a patient's ability to withstand a one-stage procedure, select for her the two, or even three, stage operation. If one is to err in the matter of too much or too little surgery, let the decision always be on the side of safety."

A considerable degree of success has undoubtedly been obtained by x-ray radiation of the hyperfunctioning thyroid, especially in early cases exhibiting mild symptoms, and in those showing relapse after operation. Administration of iodine has largely replaced radiation in pre-operative treatment, though some men have found the x-ray of value in preparing the iodine-resistant cases for operation. The chief objection to roentgenotherapy as a curative measure is that, at best, the dose of radiation is a matter of guess-work. If insufficient, symptoms are not controlled or will return; while hypothyroidism always follows too heavy dosage. Among the best authorities the consensus seems to be that the uncertainty of the results of radiation, and the inadequacy of medical treatment alone, serve but to emphasize the truth of the dictum that "diagnosis of hyperthyroidism is the indication for surgery." Recurrence of thyrotoxicosis is seen in only 3 to 4 per cent following radical operation; truly a small incidence of failure.

Under the classification of non-toxic goiter are considered those not associated with signs of thyrotoxicosis. Simple goiter commonly appears at puberty. Only rarely, when disfigurement or mechanical symptoms caused by an unusually large goiter, are marked, is surgery suggested for these adolescent patients. Bilateral partial lobectomy is then the usual procedure.

Non-toxic goiter in the adult is a different matter. Whether colloid or adenoma, diffuse or nodular, it should be looked upon as a constant menace to the health of the individual. It is well to remember that in the mature patient there is no such thing as innocent goiter. Indications for removal of non-toxic goiters are three in number, and appear to be rational and indisputable.

First: The ever-present danger of malignancy. Authorities agree that about 90 per cent of cancers of the thyroid occur in goiters which have been apparently benign for from one to fifteen years. There being no way, clinically, of determining early malignant change in these tumors, it is only a safe rule that in patients over 25 years of age all goiters should be removed. Surgical risk is practically nil, less than 0.5 per cent, and is not to be considered in view of the fact that the only cases of malignant struma which have more than a slight chance of permanent cure are those in which thyroidectomy was done, presumably for a benign condition, the discovery of malignancy being made by the pathologist. If at time of operation the pathological report is early malignancy, or doubtful benignancy, the involved lobe should be completely extirpated; and if the other lobe cannot be shown to be benign beyond reasonable doubt, total thyroidectomy is indicated. Thorough irradiation should always supplement the operation. It is necessary, while performing complete thyroidectomy, to exercise especial care to preserve the posterior capsule with its contained parathyroids. Whatever hypothyroidism may follow, can be controlled by the giving of thyroid extract, or thyroxin. But parathyroid deficiency is serious, and much more difficult to treat.

The second indication for operation on the so-called "innocent" goiter is concerned with a rather large group of sub-toxic cases. The tendency for nodular goiters to undergo toxic degeneration is notorious. But symptoms of toxicity are often very mild, with frequent and prolonged remissions, and therefore, easily overlooked by the clinician. The sub-toxic patient is suffering, nevertheless, from low-grade hyperthyroidism, which slowly, over a period of years, undermines the cardiovascular and nervous systems, and may finally lead to fatal heart disease or hypertension. The causal relationship of the thyroid is often entirely unsuspected, and can be decided only by careful periodic examinations and painstaking diagnosis. An increased basal metabolism rate

in the presence of heart disease would be very suggestive, since a B. M. R. of plus 20 or more is not part of the clinical picture of ordinary heart disturbances. Histologically the findings are those of toxic adenoma, with colloid-filled acini, and areas of hypertrophic parenchyma outisde the acini. Since both lobes are generally involved, microscopically if not macroscopically, the logical operation is double partial lobectomy. Writers agree that when hyperthyroidism is associated with unilateral adenoma at any age, it is safest to perform a bilateral resection. Results of operation on patients in this group, while not as spectacular as in the frankly toxic cases, are none-theless gratifying and enduring.

The third reason for surgical removal of goiterous tumors is seen when the increased size of the diseased gland has resulted in disfigurement, or pressure symptoms, or both. The function of the gland seems normal; its size and shape are abnormal. Though it has been shown by actual measurement that some reduction in size may follow administration of iodine in selected cases, results are usually far from saitsfactory, and never as good as from surgery. Symptoms due to the mechanical pressure of the enlarged gland upon surrounding structures vary all the way from a sense of fulness in the neck, to severe dysphagia (from pressure on the esophagus), or marked dyspnea (from narrowing of the lumen of the trachea). It should not be forgotten that even slight distortion of the trachea can become a serious complication in infections of the upper respiratory tract. Tumors developing, or extending, under the sternum are especially liable to cause pressure symptoms. Any goiter, therefore, showing a tendency to become substernal, should be promptly removed. The advantages of operating on substernal goiters before they become very large, are obvious.

As relief from the unsightliness of a large goiter, no treatment offers such good cosmetic result as does a well-performed thyroidectomy. Also, there is no operation in which it is more important to get an "invisible," non-adherent scar. In young individuals there is an excellent chance that simple thyroid enlargements will subside, and for these it is both safe and wise to do nothing.

MALIGNANCY

The prevailing belief that cancer of the thyroid is extremely rare, is erroneous. The etiology of the neoplastic change is not known, more than that the presence of nodular goiter is a strongly predisposing factor. Malignancy is so seldom associated with the exophthalmic type that this source is really negligible. That it is present, however, in between two and four per cent of simple goiters in patients over 25 years of age, is found in the statistics of European and American clinics. Moreover, in nine out of ten cases of cancer of the thyroid there is history of pre-existing benign tumor. Removal of such tumors before there is the least sign of malignancy is certainly the best prophylaxis.

Malignancy arising in adenoma comprises, according to Mayo and Crotti, from 80 to 90 per cent of all malignant strumas. Second in frequency to show malignant change is the papilloma. The point to emphasize is that operative mortality in cases where malignancy could not be detected except by the pathologist, is about 1 in 300, with 95 per cent of permanent cures.

Signs and symptoms pointing to a diagnosis of malignancy are, unfortunately, seldom present until the growth has broken through the capsule of the gland and invaded surrounding structures. The Mayo Clinic finds the basal metabolism rate to be of no diagnostic importance in the different items of malignancy. History of recent rapid growth is very suspicious. Early in its process of extension the tumor mass may be unilateral. It is hard and nodular, fixed in its bed. The patient complains of an uncomfortable sense of pressure in the neck, dyspnea, and loss of voice because of paralysis of a vocal cord. When from such history and physical findings the diagnosis is apparent, it is likely that no surgery, other than palliative, can be justified, since few, if any, have been cured by surgical or other means. Immediate surgical mortality is high (10 to 20 per cent), and even though metastasis may not be demonstrably present, recurrence is almost certain to follow. The average postoperative expectancy of life is stated as follows: for sarcoma, six months; for carcinoma, one year and five months. It is probably better to consider these patients inoper-

able. In no other malignant condition are radium and x-ray of greater value, though cures can hardly be expected. Results reported by German radiologists and by Craver in America, are better than those accomplished by surgical procedures.

CONCLUSIONS

In infections of the thyroid, surgery is demanded in severely acute cases. Also, in the chronic conditions, Riedel's struma, and struma tuberculosa, exploratory operation is often necessary to differentiate from cancer.

Except in the simple, diffuse enlargements of adolescence, surgery alone, or combined with medical treatment and radiation, is indicated in the treatment of all benign goiters whether toxic or non-toxic. Surgery with irradiation is the ideal therapy for early malignancy. The clinically malignant goiter is generally inoperable.

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NOTE

(A companion article to the foregoing, entitled "What to Expect from Surgery in Treatment of Exophthalmic Goitre," by Drs. W. L. and C. P. Brown and J. L. Murphy, of El Paso, will appear next month. It was omitted from this issue owing to delay in preparing the accompanying statistical tables.)

X-RAY AND RADIUM TREATMENT OF HYPERTHYROIDISM

JOHN W. CATHCART, M. D.
El Paso, Texas

(Read before the Nineteenth Annual Session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

That hyperthyroidism is an important symptom complex in this section of the country, is evidenced by the vote of this society to consider its treatment by the three outstanding methods in vogue today, namely, surgical, by irradiation, and medical. It is my privilege to present the subject from the viewpoint of the radiologist. We do not wish, however, to be considered as depreciating the value of the other two methods and, likewise, we trust the other essayists will give to radiology the credit it deserves. It required about thirty years for the surgeons to convince the medical men that surgery was an accepted treatment for goiter and now, after about thirty years, the radiologists are accumulating statistics of such value that radiology is being considered favorably in many quarters.

The subject then resolves itself into a discussion of the following points: (1) Is any one of the three methods of such value that the others may be discarded? (2) Shall the treatment be selected for the individual patient? (3) Are there cases in which a combination of all three methods are desirable?

What constitutes hyperthyroidism? For the purpose of this paper, there may be discarded the many anatomical and pathological classifications applied to thyroid glands with an excess of secretion, and it is assumed that excessive function may be associated with a gland normal in size, a gland that has hypertrophied, or a gland containing adenomatous tissue or an excess of colloid.

Whether it is infectious in orgin, or due, as more generally believed, to a deficiency of iodine in the plant life and drinking water of the communities where goiter is endemic, has little bearing on the question of irradiation therapy. It is, however, interesting in this connection to note that the Department of Agriculture has determined that, in regions where

sows give birth to myxedematous pigs, it is only necessary to feed the sows food from a non-goiterous region to have them produce normal pigs.

Clinically the picture of hyperthyroidism is characterized by tachycardia, fine tremor, nervousness, flushing, sweating in palms, loss of weight and strength without decreased appetite, tolerance to cold, intolerance to heat, vomiting and diarrhea, high basal metabolic rate, and exophthalmos in about 10 per cent of cases. The necessity for a complete examination is in no class of case more essential than in hyperthyroidism. While the many abnormal conditions present in these patients are variable, they very frequently have a direct bearing on the case. The basal metabolism test is the most useful of the laboratory procedures, but, like many laboratory procedures, must be accurately performed and evaluated if its results are not to be misleading. In the absence of a metabolism apparatus the D.V.A. (duration of voluntary apnea) as advocated by Drs. Bartlett and Bartlett[1] may be substituted. The normal individual should be able to hold his breath on full inspiration for 72 seconds, and on expiration, 48 seconds. The general average of the cases upon which they operated was 47/24. Where the D.V.A. dropped to 22/13 the case was considered a poor surgical risk.

Suitable for irradiation (irradiation is treatment by x-ray or radium) are all forms of toxic goiter in which the tumor is not producing marked pressure symptoms. Also any case where surgery is contra-indicated by reason of an intercurrent disease such as diabetes, heart disease, and so forth.

Irradiation therapy of hyperthyroidism is free from many of the objections to surgery. The mortality is zero. There is no question of safe anesthetic. No detailed technic which may go wrong and injure the recurrent laryngeal nerve or the parathyroids. No air embolism; no acidosis; no post-operative toxic crisis. There is little wonder that the surgeon approaches thyroidectomy with seriousness. Irradiated patients are seldom hospitalized and in most instances continue with their usual occupations, giving only added special attention to rest and diet. It is easier to secure the cooperation of the irradiated cases as they are not so prone to do as they please because of the feeling that the operation is the whole of the cure. Again they are contacted more often and their daily life and habits are better regulated.

There is no danger to the parathyroids, and myxedema very seldom follows irradiation. The length of time required for treatment by irradiation is used as an argument in favor of surgery, but this is not as great as it might seem. The average surgical preparation takes about two weeks; allow two weeks for the operation and thirty days for convalescence, and two months have been used. During that same time a patient being treated by irradiation should show a marked improvement although he will still be under treatment. Again, where the surgeon has had only one guess as to the amount of tissue to be removed, the radiologist has several and has the advantage of being guided by the patient's progress and basal metabolic rate.

The question of injury to the heart through delay by patients first trying irradiation seems not to be well founded. Holznecht,[2] who has reviewed the literature, failed to find a single case that had been injured by delay. On the contrary, there are many eminent surgeons who advise irradiation to prepare their worst cases for operation. There are others who believe irradiation to be suitable for cases with a basal metabolic rate below 40.

There are certain advantages to surgery. The length of time until the maximum advantages are secured is shorter and there are probably a few less recurrences, although from available statistics it is impossible to give definite figures for either form of treatment.

Often we hear patients advised that they should have their thyroid removed to prevent the possibility of malignancy. It would seem that malignancy should not enter into a discussion of hyperthyroidism. Pemberton and Frick[3], reporting on 161 carcinomas of the thyroid gland at the Mayo Clinic, state that, "In none of our cases did carcinoma arise in exophthalmic goiter." Hertzler,[4] states that he has never been able to convince himself that he has cured a malignant tumor of the thyroid by operation and believes that it is well to stick to the basic truth that glands that are

hyperactive are not malignant. Pfahler[5], by correspondence with eight of the outstanding radiologists of this country, traced the results in over 1200 cases of toxic adenoma that had been treated by irradiation, and found not one in which malignant degeneration subsequently took place. He, therefore, concluded. "Since carcinoma of the thyroid seems to be especially sensitive to irradiation, we may in fact be preventing or curing such early degeneration." It is well also to note that in El Paso, not being in a goiter district, the normal ratio of malignancy to goiter, i.e. 1-300, is low and malignancy is met with here far more frequently than the general average indicates.

Results of irradiation treatment have been well shown by Menville[6], who collected from seventy-five radiologists their results in 10,-541 cases. Percentage of cures are given as 66.22 per cent. Marked improvement, 21.05 per cent. Recurrences, 8.45 per cent. Failures 12.4 per cent. Treated after operation, 9.95 per cent. Number of cases in which surgery failed, 979. Mneville notes in connection with the survey that the poorest results, as in surgery come from the smallest groups treated. It is probably only fair to assume that, if we had a large radiological institute treating goiter by irradiation, much better results would be obtained. The ability of such a group to control the many factors, such as focal infection, overwork, fear and worry, family disharmony, gastro-intestinal symptoms, subjective heart symptoms, and the many other allied pathological conditions, would be a big factor in improving the end results.

Krause[7] has collected 1342 cases treated by irradiation and gives the results as good in 82 per cent; poor, in 18 per cent. From these and various other tabulated results, one must conclude that irradiation as practiced during the past ten years gives, on an average, 65 per cent of symptom-free patients. Fifteen to 20 per cent improved and returned to their occupations. Ten to 20 per cent do not improve and it is in this latter group that more careful diagnostic care should be exercised before abandonment or condemning the treatment.

Statistics in goiter must, however, be taken as approximate only, for any statement as to results that does not take into consideration the life span of the patient, is not complete.

The surgical mortality rate so often quoted and originating from a few large clinics, unfortunately does not represent the true status of the goiter patients. It also gives a wrong impression when it fails to take into consideration the many postoperative complications. These are very nicely handled by Jackson[8], who, in a recent issue of the Journal of the A.M.A., lists the number as twenty-three.

In our treatment we have used the x-rays and radium interchangeably, considering them of equal value. The radium has been used principally on highly toxic cases with fibrillation to such an extent that the patients were confined to bed in their homes or in a hospital. The radium technic consists of blocking-off the thyroid and applying 100 milligrams, heavily screened, at a distance of 3 cm. Fifteen hundred milligram hours is given at a treatment; the second treatment is given in two weeks, and after that every third week.

The x-ray technic consists of 140 KV 5 milliamperes, 12 minutes, filtered through 4 millimeters of aluminum, at a distance of 38 cm. This treatment is given through each of two semilateral ports and extends down over the thymus area, as it has been shown that the thymus is frequently enlarged in goiter cases. The same interval is used as in radium treatments. Neither of the above technics will produce structural changes in the tissue that will in any way interfere with a subsequent operation, should it be deemed advisable. In a test made elsewhere, it was shown that neither surgeon nor pathologist can pick the cases that have been irradiated. Adhesions are sometimes present at operation, but these are the result of inflammation in the diseased gland and occur in the untreated as often as in the treated cases.

Irradiation acts on the gland by first reducing the secretion of thyrotoxin; later, this is followed by a shrinkage in the tumor. The thyrotoxicosis disappears more rapidly than the goiter.

Iodine in the form of Lugol's solution, five to ten drops in milk t.i.d. pc., or quinine hydrobromide, Gr. V t.i.d. pc., is used as an adjuvant during the early weeks of the series of treatments, but is discontinued as the basal

metabolic rate approaches normal, thus leaving to irradiation to establish the normal amount of secretion to be retained.

Our patients were referred for treatment by physicians of outstanding ability who would not continue to refer cases for irradiation in preference to surgery if results were not equally as satisfactory, for it is a well-known fact that all too often it falls to the lot of the internist to discover the patient behind the thyroid and worry along for years with the patient registered as cured, in the surgical column.

A brief review of eighty-three cases treated since 1924, is presented. A few cases treated prior to 1924 are not included in the series, due to lack of proper basal metabolism control.

From this group we are excluding four cases: one, a woman of 72 with a basal metabolic rate of plus 17, in which the attending physician has changed the diagnosis; three patients who were operated upon after the second treatment, before sufficient time had elapsed to properly evaluate the treatment. Six of the cases in this series had been previously operated upon and had recurrences. In this group, sixty-five were females and fourteen were males. The age limits varied as follows:

Under 20	7
20 to 30	20
30 to 40	27
40 to 50	12
50 to 60	8
60 to 70	5

The average metabolic rate at the beginning of treatment was plus 31.58, and at the completion of treatment, minus 1.25. The average gain in weight was 8 pounds.

The average number of treatments given in our series per patient, was 7.

Three patients treated by irradiation have returned because of recurrences: one after six years; the others after two years. There may be others who have had recurrences that have not been reported, as the follow-up system is by no means perfect. It is impossible to give statistics as to final results in so recent a series, but from our experience we feel justified in drawing the following conclusions:

1. Irradiation is a therapeutic measure of comparable value with surgery in the treatment of hyperthroidism, in all cases not complicated by an excessive size of the gland from colloid or cystic material or the presence of a large amount of fetal adenomatous tissue.

2. Irradiation is superior to surgery in the adolescent enlargement with thyrotoxic symptoms, under 20 years of age.

3. The zero mortality, absence of pain and suffering, as well as the economic advantage of irradiation, are decidedly in its favor.

4. The internist is still a major factor in the care and treatment of hyperthyroidism and there exists greater need for closer collaboration between the surgeon, radiologist, and internist.

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THE HEART IN THYROID DISEASE

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(Read before the Nineteenth Annual Session of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

The two thyroid ailments causing heart symptoms are hyperthyroidism and hypothyroidism.

Is the general fear of heart failure in hyperthyroidism justified?

Is it the main cause of death in hyperthyroidism?

How badly is the heart injured by prolonged hyperthyroidism?

Is iodine injurious?

What are the effects of hypothyroidism or myxedema on the heart?

CASE 1. Real estate man, aged 52 years, was

referred by Dr. J. D. Love, Dec. 31, 1925, for heart disease. I found him bedfast, greatly emaciated, nervous, very restless, appetite poor, some vomiting, constipated, mouth foul, tongue coated, heart rapid —150 per minute and tumultuous in action. He had gone from 180 to 115 lbs. in weight.

For ten years he had had similar spells of short duration, with intervals of a year or two of very good health. For some time the diagnosis was in doubt but finally eye signs and goiter put the label on his ailment.

Under iodine the heart rate fell to 100, the fibrillation stopped, the blood pressure rose from 90 systolic to 120/76. In two months he gained 15 pounds and his metabolism was plus 7. July 7, 1926, his heart was again fibrillating, pulse 120 after being off iodine only ten days. Iodine was resumed and in a week the heart was again regular, pulse 96.

During the next two years he continued to pass through the same cycles. Finally fibrillation became permanent, mental derangement followed and he was sent to the State Hospital in San Antonio, where iodine was continued, with rest and forced feeding. Oct. 14, 1929, he wrote that he had gained 67 pounds, that the goiter was smaller, the pulse 80, and that his strength had returned. He died in 1931, cause unknown.

One must consider that this man's hyperthyroidism began in 1915, a total duration of sixteen years. At the end of this time he apparently had less heart faliure than when I first saw him. This I think discredits the idea that unchecked hyperthyroidism will soon damage the heart beyond repair. It is also to be noted that the iodine did not lose its effect but caused a remission of his crises promptly. In a considerable experience with iodine in hyperthyroidism among laboring people, I have seen nothing but benefit from its use continued for years. I think the fear and apprehension as to the injurious effects of iodine in goiter have about subsided. Haines[1] of the Mayo Clinic now says that in hyperthyroidism iodine should be adminsitered constantly and not intermittently during the course of the disease. McClure[2] is not at all convinced that overdosage of iodine does any harm. In the Johns Hopkins Syphilitic Clinic, in a series of 6000 patients, some taking as high as 120 grains of iodides daily for 12 months not a single case developed hyperthyroidism. In a Detroit clinic with over 3000 cases taking iodides, only one or two have come under suspicion of developing hyperthyroidism, and this in a goiter region. Dautrebande[3] in Belgium has found long steady administration of Lugol's solution, 10 to 40 drops daily, and larger doses if the metabolism is not controlled, to produce excellent results in 75 per cent of his cases of hyperthyroidism of both types. He continues it for a year after operation. So I think the general practitioner should make full use of this drug; and the fact that iodine had been given sometime in the past should not be blamed for surgical mortality that is inevitable in the best of hands in certain cases.

I think this case too, shows that the danger of heart damage is not so imminent as often imagined, and haste in operation is seldom necessary, especially where intelligent medical treatment can be carried out. At the same time, surgery or radiation in this case might have resulted in cure. Personally I have had no permanent cures without one or the other of these aids, although some mild cases apparently make spontaneous recovery.

CASE 2. Salesman, age 48 years, was referred by Dr. Rogde for diagnosis, Sept. 3, 1930. He complained of palpitation, dyspnea, and smothering spells. He had lost much weight in spite of a good appetite.

In 1919 he had pyelitis and his weight fell off from 200 to 140 pounds. Another time all his teeth were extracted and he lost 35 pounds. For the last year his legs and scrotum had been swollen. Six days before I saw him his chest had been fluoroscoped and a dense shadow was seen in the right lower lobe more marked next to the diaphragm and spreading upward. This, with a palpable rather hard liver, suggested a probable malignancy.

On examination his whole body was edematous. There was a large amount of acites and some fluid in both pleural cavities. Blood pressure 140/80, heart absolutely irregular, vessels of neck pulsating. The heart dullness extended 4 cm. to the right of the midsternal, of good tone with no murmurs. So far no diagnosis had been made. His right pleural cavity was aspirated and he was given digitalis and theosin. After this another x-ray examination demonstrated the absence of lung tumor. As the edema subsided, the right lobe of the thyroid was large and the isthmus easily palpable. This, with his history, made hyperthyroidism quite certain. Basal metabolism was plus 40.

He was given Lugol's solution and sent for x-ray treatment. At the end of three weeks he was feeling much better, no edema except for varicose veins in the legs. He had gained seven pounds, and his fibrillation had stopped. Six months later the left border of the heart was 10.5 cm. from the midsternal line, basal meabolism plus 17. He was still on iodine. Dec. 31, 1931, the metabolism was minus 15. For the past two years he has been working constantly, carrying much responsibility and going to high altitudes with no signs of heart failure.

While the diagnosis of hyperthyroidism is said to be easy I have not found it so in all cases. This man had traveled from Mexico to San Francisco and New York and no one had mentoined hyperthyroidism. The case illustrates the efficiency and safety of x-ray treatment where surgery would hardly be attempted. Charles Mayo has often said that hyperthyroidism is never a surgical emergency.

The rapidity and completeness of this patient's recovery supports the growing belief that uncomplicated hyperthyroidism is not capable of causing permanent heart disease.

It has been the common opinion among surgeons and others that death in hyperthyroidism is due to the heart. Willius[4] says that such has not been their experience at the Mayo Clinic: "In 178 autopsied cases, congestive heart failure occurred in twenty-seven. In eighteen of these (67 per cent) coronary sclerosis, acute or chronic pericarditis, rheumatic endocarditis, or syphilis, was present. In nine cases (5 per cent of the 178 cases) there was found no other cause for congestive heart failure than hyperthyroidism.[5] Hyperthyroid cases are found to die of infections, pneumonia, arterial embolism, pulmonary infarction, and so forth, and are not exempt from cancer of the stomach, leukemia, and other fatal diseases. Even where heart failure occurs, it is generally quite chronic, as in the two cases just discussed, and the heart is not progressively damaged.

There has been much recent work on the heart failure of hyperthyroidism and in general the findings agree with those of Rake and McEachern,[6] who say that: "Both autopsy and experimental material point to the fact that hyperthyroidism by itself produces no specific lesions in the myocardium."

According to Yater,[7] heart failure occurs in hyperthyroidism because of the direct action of thyroxin on the heart muscle, increasing the rate and energy of contraction. With the increased rapidity of the circulation, there is a corresponding increase of metabolism in the heart and other tissues, and with this an excess of metabolites in the blood stream. The local action of these metabolites in the vessels causes peripheral vascular dilatation, and this accounts for the wide pulse pressure and the jumping carotids in these cases. The circulation of the blood is speeded up at times to almost double the normal, while the widening of the peripheral blood stream increases the volume of the blood and puts the heart to a great mechanical disadvantage, leading finally to exhaustion of its reserve and heart failure in certain cases.

The whole cardiovascular upset results from an unmanageable thyroid pouring too much thyroxin into the blood, and can be stopped only by destruction of the gland by surgery or x-ray. The conquest of hyperthyroidism remains to be accomplished. The prevention of goiter by iodine has already reduced the prevalence of hyperthyroidism, and this partial success in therapy may lead to other discoveries. Finally, hyperthyroidism is destined to become a purely medical disease.

CASE 3. A school principal, age 57 years, had a thyroidectomy, April 25, 1926. Her hyperthyroidism had lasted a year or more and was complicated by a mild psychoneurosis of periodic type. Her basal metabolism was 131, blood pressure 200. She had lost 60 pounds in weight and was easily exhausted. She had angina pectoris in 1924.

A year and a half after thyroidectomy she was referred to me for heart examination. She had been urged to walk to build up her strength but was completely exhausted after going four blocks. She had attacks of sudden nocturnal dyspnea, spells of dizziness, nausea, diarrhea, and fever, was very emotional, cried easily, had a poor memory, taking half a day to write a letter. Her speech was slow and hesitating, hair and skin dry, face swollen. The heart appeared normal, sounds well produced, with no murmurs. An electrocardiogram showed low complexes in all leads. I made a diagnosis of myxedema and suggested thyroid, 3 grs. daily. However, she put off taking it until in Rome, a month or two later, the diagnosis was confirmed by Dr. Colazza and she at first took six grains of thyroid daily, but this had to be reduced to 2 or 3 grs. She made rapid improvement but is still on thyroid. Her mental condition is quite normal, she walks long distances with only slight dyspnea. Blood pressure 144/88. The electrocardiogram shows normal voltage and normal T and R waves.

Myxedema after thyroidectomy may be slow in developing and heart failure may come still later. With the administration of thyroid, the heart muscle is stimulated and the speed of the circulation increased. Lack of thyroxin causes general muscular weakness including the heart, and the speed of the circulation is reduced, falling parallel with the metabolism. Poor blood supply to the brain accounted for her mental sluggishness and poor memory.

The early giving of thyroid has prevented damage to the heart. In myxedema there is increased cholesterol in the blood, coronary sclerosis is common, and angina pectoris occurs in some cases.

The two following cases were operated in a well-known Cleveland clinic.

CASE 4. Housewife, age 52 years, was seen, with Dr. Mallory, Jan. 11, 1927. Her heart was fibrillating before operation in Ohio. After operation she was very weak, blood pressure low and heart action feeble, with coupled beats. These disappeared under atropine. The electrocardiogram showed very low voltage in all leads. She was given one-quarter grain of thyroid t.i.d. and six days later the electrocardiogram showed normal T waves and greatly increased voltage. She continued taking thyroid and made a very good recovery.

CASE 5. Male, age 49 years, came to me for several years for nervousness. He always improved on iodides, which relieved his aches and pains, and I was satisfied with a diagnosis of neurosyphilis. Later he developed typical hyperthyroidism and was operated in Cleveland. Six months after the operation he was unable to work, was completely exhausted on effort of any kind, memory poor, dizzy, and so uncertain of himself that he could not drive his car. Skin was rough and dry, eyes puffy. His myxedema responded well to thyroid, 3 grs. daily. He still takes it at intervals.

Myxedema is the same disease whether postoperative or not.

CASE 6. Mexican woman, age 59 years, was referred to me by Dr. Love, Oct. 30, 1933, because of prolonged and unmanageable heart failure. Her legs, feet, and body had been edematous for several years, but for the last three months much worse. She was exhausted by the mildest exertion and unable to sleep except in a sitting position. On account of previous free use of alcoholic drinks, cirrhosis of the liver was suspected and she was sent to the City-County Hospital for study in September.

She was very cyanotic and dyspneic. Temperature 98.6°, pulse regular, 88, respiration 26. Lungs showed a few dry rales. Heart sounds normal, no murmurs. Laboratory report; red cells 6,850,000; hemgb. 135 per cent; leukocytes, 10,800. Urine normal except for albumin plus. The diagnosis at the hospital was heart failure with edema and nephritis.

Digitalis and salyrgan treatment was given and the belly tapped, but no fluid was obtained. On two ocacasions, 500 cc. of blood were withdrawn from a vein. She left the hospital in ten days, somewhat improved.

I saw her two months later. She was still on digitalis, but her condition remained the same. She was drowsy all the time. Her speech was slow and uncertain; she complained of being cold all the time. Her skin was dry, arms hairless, face swollen, girdle obese, abdomen large and pendulous, buttocks and hips thickly padded with fat. Weight 295 pounds. Circumference of abdomen, 53 inches. The heart appeared but slightly enlarged, sounds well produced, no murmurs. Blood pressure 130/88. Wassermann and Kohn tests negative. Hmgb. 100 per cent. The evidence pointed to myxedema. The thyroid was not palable. The digitalis was stopped and thyroid, 33 grains daily, and Epsom salts were ordered. Three weeks later when I visited her she was at work. Her edema was nearly gone, her drowsiness had disappeared and mental condition was normal. Electrocardiogram at this time was normal except for notching of R in lead 2.

Heart faliure due to organic disease alone does not respond to thyroid. We must consider the heart failure and edema in this case as due to feeble heart action from thyroid deficiency. A similar picture has been produced in thyroidectomized sheep—flabby heart, absence of cross striation in heart muscle, ascites, and so forth. In these animals arteriosclerosis also resulted.[8]

The medical treatment of myxedema is quite dramatic in its results and should be attended to before organic damage to the heart has resulted. The danger from this source is greater than in hyperthyroidism.

In some instances, it is said, heart failure or angina pectoris has been caused in myxedema cases by over-stimulation of the weakened heart. I have had no such experience and suspect that in these cases the dosage of thyroid may have been too large.

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HYPOTHYROIDISM

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(Read before the Nineteenth Annual Meeting of The Medical and Surgical Association of the Southwest, at El Paso, Texas, Dec. 7 to 9, 1933).

This paper is to be brief—nothing new or scientific—just my own observations in daily practice.

During the mad rush of prosperity, with only thoughts of big things such as the study and development of ultra-scientific medicine and special surgery, the minor complaints and ailments have frequently been neglected. About ten years ago, I became interested in hypothyroidism after observing a patient, who had been below weight for several years, gradually attain a normal weight by taking thyroid. Since that time I have realized that "being tired" does not always mean overwork or tuberculosis. The results of thyroid medication have been most gratifying. In our enthusiasm, we think in the vernacular of the soap-box orator who speaks of "making the fat lady lean, and making the lean lady—fat."

It has been stated that the thyroid and parathyroid, by means of an internal secretion, exercise an important control over the process of metabolism in the body. We could further say that the function of the thyroid is to neutralize or destroy toxic substances formed in the metabolism of the rest of the body. In my opinion, our locality has a far greater percentage of hypothyroidism than any other section of the country; whether or not this is due to altitude, amount of sunshine, lack of humidity, or chemistry of the water supply, we have been unable to determine. Since it is well-known that hyperthyroidism is most prevalent in the Northwest and around the Great Lakes, where rainfall is abundant, why should we not assume that the lack of rainfall in our own locality, where we have a minimum amount of rain, would account for the greater percentage of hypothyroidism. We may be assuming too much in believing that our locality has a greater percentage of hypothyroidism than other parts of the country, but with the greater percentage of hypothyroidism as compared to the lesser percentage of hyperthyroidism, we still believe that we are justified in thinking that it is a fact. For comparison, I submit the following chart:

	+34	
	+45-65	4
	+35-45	3
	+25-35	12
	+25	0
	+24	2
	+23	2
	+22	3
	+21	3
	+20	1
	+19	3
	+18	1
	+17	1
	+16	5
	+15	5
	+14	7
	+13	5
	+12	3
	+11	4
	+10	6
	+ 9	7
	+ 8	4
	+ 7	5
	+ 6	10
	+ 5	9
	+ 4	13
	+ 3	11
	+ 2	9
	+ 1	10
+ 0		19
	— 1	9
	— 2	15
	— 3	11
	— 4	10
	— 5	14
	— 6	20
	— 7	19
	— 8	16
	— 9	16
	—10	11
	—11	29
	—12	19
	—13	20
	—14	14
	—15	21
	—16	22
	—17	14
	—18	14
	—19	16
	—20	20
	—21	10
	—22	14
	—23	10
	—24	5
	—25	5
	—25-35	25
	—35-45	2
		—361

During the years of 1932 and 1933, we ran 568 metabolisms on 441 patients; note comparison of 147 pluses, 402 minuses, and nineteen naughts. We consider plus 1 to plus 16 normal, but therapeutically, we would consider all below a minus 5 pathological. The great difference in ratio is demonstrated by the number of 34 above plus 16 and 361 below minus 5. Some few years ago, a series of basal metabolisms was run on seventy-three pregnant women; fifty-eight were minus, and of this number, fifteen were from minus 20 to minus 30. If one looks only for symptoms such as dry hair, brittle nails, over-weight, drowsiness, temperature below normal, and susceptibility to changes in weather temperature, as outlined in text books, one will overlook many cases of low metabolism. Until the past few years, no one would have suspected a tall, thin individual as having hypothyroidism, nor would one have thought of adding weight to such a person by giving him thyroid medication; neither would one expect a nervous patient or one with a continuous fever, of having a lack of thyroxin. As an illustration, I cite the following case (in this instance and in all other cases used as examples, I shall be brief, and shall try to use the patient's own statement as much as possible):

Miss C., age 24 years. Gave history of good health until six years ago. At that time a diagnosis of tuberculosis was made,and patient was kept in bed for six years until she came under our observation in March, 1932. She was told by her attending physician that she had very little trouble and would soon be well; she was apparently well on several occasions; however, following the slightest exertion, tachycardia and elevation of temperature were present. Her weight on going to bed was 120 pounds, and when she came under our care six years later, her weight was 113 lbs. On physical examination and x-ray, we found her chest negative, heart rate 100 to 120, which was accelerated on the least exertion, and a daily elevation of temperature. Her basal metabolic rate was minus 23. After she had taken thyroid, her temperature returned to normal, pulse improved, she had a gain in weight, and feeling of general well-being. The patient was placed on exercise, and has really enjoyed the past year. Despite the fact that she had been taking 1½ grains of thyroid daily, about one year later, she had recurrence of old symptoms, and at this time we became suspicious that tuberculosis really did exist. Her B. M.R. was minus 22. Thyroid, grains 3 daily, was prescribed, and two months later, patient came into office, bragging of her improved condition; she had gained 2 pounds, was doing a great deal of work, had normal temperature and pulse rate of 80.

While observing clinical symptoms, we often find it difficult to conclude whether we are dealing with hyperthyroidism or hypothyroidism—as in the following cases:

Mrs. H., age 28 years. In 1926 had thyroidectomy, and this was followed by a gain in weight. Felt normal until 1932, when she became very nervous, complained of headache, backache, irregular menstrual periods. Her pulse rate was 80, and her B. M.R. was minus 5. She was given thyroid, and made definite improvement. She returned, however, in September of this year with severe headache, marked fine, bilateral tremor, and extreme nervousness. Her symptoms were such that one would have suspected a return of her thyrotoxicosis; however, her B.M.R. was minus 20. We prescribed thyroid, gr. 1 daily; two months later, she was feeling fine, had no tremor, no headache, no nervousness, and had gained 6 lbs. in weight.

Another symptom frequently noted is a feeling of fulness in the throat. The patient states that he feels as if his collar is too tight. The only explanation of this is that the gland hypertrophies, while trying to put out enough thyroxin to supply the body's needs.

Mr. G., age 23 years, illustrates this symptom. On Sept. 18, 1930, he came to us with a history of tired out feeling during summer. At times he felt as if his neck was swollen and complained of choky feeling. Felt below par and was losing all interest in school. His pulse ranged from 72 to 120, and his blood pressure was 110/70. His B.M.R. was minus 13. Thyroid, gr. ½ daily, was prescribed. This was gradually increased to 1½ grs. daily until, by the end of the month, the patient was feeling fine, pulse was 84 and steady, discomfort in neck had disappeared, and patient had complete amelioration of symptoms.

We believe that dysfunction of the thyroid gland accounts for more menstrual derangements than dysfunction of all the other endocrine glands combined.

Miss P., age 20 years, student. Gave history of no serious illness. Had onset of menses at age of 11 years. Chief complain was recurrent attacks of fever which ranged from 99° to 100° and which lasted for several days. To the best of her knowledge, these spells always came on at time of menstrual period. The present spell had lasted for ten days, and she was still running elevation of temperature in afternoon. Her B.M.R. was minus 26. Thyroid, grs. 1 to 1½, was taken continuously from March until November, with the result that the patient felt quite well, and had no recurrence of above-mentioned symptom. After starting her school year again this fall as a teacher, she be-

came tired, and her B.M.R. was minus 21. Thyroid was increased to 2½ grs. daily; following this, patient has been feeling entirely normal.

Occasionally a patient, while taking thyroid, will become very nervous, has fast pulse, tremor, and shows evidence of too much thyroid. This, we believe, is due to the patient's own thyroid gland putting out thyroxin.

Miss G., age 32 years, teacher. History of repeated colds every winter; felt below par and tired easily. Physical examination was negative, but her B.M.R. was minus. Thyroid, gr. 1 daily, was prescribed and gradually increased to grs. 3 daily. She apparently had relief of all symptoms, when she suddenly became very nervous, had fast pulse and so forth. Her B.M.R. had jumped to plus 26. Thyroid was discontinued for a few days, and then grs. 1½ to 2 daily were again prescribed and continued until end of school year. November 27, 1933, or six months following last visit, she states that she has the thyroid down to an exact science. She had taken grs. 1½ daily all summer; but when she started teaching in the fall, she found it necessary to take 2½ grains daily. She states that she is feeling fine, is not tired, and has no colds.

The degree of minus does not always indicate the amount of thyroid that the patient will require. Some individuals who have a B. M. R. of minus 20 will take from ½ to 2 grains daily, whereas another will need from 3 to 6 grains. This may be explained by the fact that our estimate for normal is made from an average of from plus ten to minus ten; therefore, if the patient's B. M. R. should have been a high normal, or plus 10, then a reading of minus 10 would in reality be a minus 20 below the individual's normal B. M. R. In taking the basal metabolic rate, do not be deceived by the first reading, because a minus 10 is often a minus 17 on recheck. In prescribing thyroid, we start with small doses and gradually increase them; in doing this, we find that the pulse, nervous symptoms, insomnia, and general well-being of the patient are very good guides, with an occasional B. M. R. to determine the exact metabolic rate. We have found that thyroid given in the evening will cause insomnia in some cases; therefore, we have made it a rule to prescribe this medication after breakfast and after lunch. The thyroid used in most cases is Parke-Davis' dessicated thyroid; each grain is equivalent to 5 grains fresh gland, and we specify the enteric-coated tablet.

I have often wondered if thyroid taken the day before the B. M. R. is run, would keep the rate up to normal for twenty-four hours following its administration; with this in mind, the following test was made:

A patient, who had been taking 2 grains thyroid daily for several months, had an early morning metabolism test following usual routine; the results were zero. On another day, we had the patient take 1 grain thyroid two hours before test was made, and the B. M. R. was minus 4. Again, instead of the usual preparation for metabolism test, patient had breakfast and performed his usual morning duties; at 9:45 a. m., in spite of the fact that the patient had had no rest, his B. M. R. was plus 6.

Many symptoms and conditions such as eczema, acne, chronic indigestion, chronic constipation, low blood pressure, arthritis, chronic colds, and so forth, are relieved or cured by the use of thyroid. Fancy, if you will, the most common malady—bad cold—responsible for probably more time off duty than all of the other acute diseases combined. In our own organization we have had two examples of the above. The first is a doctor who gave a history of repeated colds both winter and summer for years. His B. M. R. was found to be minus 26. Since taking thyroid, he has not been off duty on account of a cold, and has not had one—except for one instance, when he neglected to take his thyroid while on a vacation. The other example is our receptionist, who had repeated colds. In her position, an adenoid voice was not conducive to a cheerful reaction on the part of our patients, although this condition may have been "good for business." Her B. M. R. was minus 19; and here, too, thyroid was prescribed with highly satisfactory results. Still another example of the above-mentioned symptoms is the following case:

Mr. M., age 56. Gave history of uncomfortable feeling around region of appendix for years. For three months prior to seeing us, had painful and swollen joints, distressed feeling around heart, gas on stomach, and eruption and itching of right leg. Blood pressure was 162/95, and pulse was 70. His B.M.R. was minus 18. After thyroid, grs. 1 to 2, was taken daily, following notation was made at a subsequent visit: feeling fine, heart improved; eruption on leg gone, joints less painful, blood pressure 140/88, and pulse—normal! One year later, April 6, 1931, patient was feeling optimistic about the future; and we feel, as you will no doubt agree,

that if a few pills could have made a man feel cheerful during the gloomy year of 1931, why should we bring back "good, old, Blue Ribbon Malt-a."

Miss S., a graduate nurse, age 26 years. Came under our observation January, 1932, with a history of having become very tired, and of having run continuous temperature of 99 to 100 while in training. A diagnosis of tuberculosis was made; patient was sent to Arizona and ordered to bed. Findings on examination were as follows: lungs were negative to physical examination and x-ray, pulse ranged from to 100 to 140 (depending on whether patient was reclining or standing), and temperature, after patient had been in bed for several days, varied from 90° to 100° plus. Her B.M.R. was found to be minus 26, and January 20th, we prescribed thyroid, gr. ½, to be taken after breakfast and after lunch. Ten days after starting thyroid medication, patient was running normal temperature, pulse 84, was very pleased with her condition, felt more comfortable than she had for months, and wanted to go to work.

Mrs. W., age 37. Complained of headache, nervousness, pain in eye, recurrent boils, lack of energy, tired feeling all the time, also complained of constipation. Metabolism showed a B.M.R. of minus 16. After taking thyroid, the following progress note was made two weeks later; we quote the patient: feeling better, eyes comfortable, no backache, and bowels regular since the first day she started thyroid.

Sister V, age 54 years. Came under observation Nov. 20, 1933, with a diagnosis of enlarged heart and Renaud's disease, when she was transferred from St. Paul, Minn., to St. Mary's Hospital in Tucson. On physical examination, we were impressed with the facies of the patient, and suspected myxedema. Her B.M.R. was minus 36. Thyroid was prescribed and increased until 8 grains were taken daily. This was followed by immediate improvement, and there was a marked change in the general appearance of the patient, especially the facies. The most remarkable result, however, was demonstrated, two weeks after thyroid was first prescribed, in an x-ray which shows marked reduction in size of heart. Summary of x-ray is as follows:

"Films taken Nov. 20, 1933, (Fig. 1) show the greatest diameter of heart 17.1 cm., whereas it is now 15.9 cm. (Fig. 2) The estimated smallest diameter of heart on previous films was 13.6 cm. and is now 12.4 cm. Both stereo sets were taken at 72 inches."

Following is notation made by roentgenologist: "Generalized reduction in size of heart shadow, less fullness at base of the heart, and less evidence of passive congestion than was present Nov. 20, 1933."

A third film was taken Feb. 1, 1934, approximately two months later (Fig. 3). Note contrast in size of heart. No other medication than thyroid had been taken.

Fig. 1 Fig. 2 Fig. 3

INTRAPLEURAL PNEUMOLYSIS, AN AID IN RESTORING FUNCTION TO THE TUBERCULOUS LUNG

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(Read before the Nineteenth Annual Meeting of The Medical and Surgical Association of the Southwest, held at El Paso, Texas, Dec. 7 to 9, 1933).

By the title of this paper I wish to emphasize that intrapleural pneumolysis is the principal surgical procedure which offers hope of restoring to comparatively normal function the tuberculous lung.

We know that adequate pneumothorax, through healing of the tuberculous lung, frequently brings about the production of scars so insignificant that the x-ray picture of the patient's chest after re-expansion of the lung will not disclose to the casual observer which of the lungs has been collapsed. This was demonstrated to me sixteen or seventeen years

ago and has been noted many times since. Such a result should be fairly frequent in these days when the physician treating tuberculosis has learned the therapeutic necessity of instituting pneumothorax at an early stage of the disease, before extensive destruction of lung tissue has occurred. Of course there will always be some cases in which destruction has occurred before coming to pneumothorax, to such an extent that restoration of function may not be expected with the most favorable conditions. Education of the public and of physicians will reduce this number.

Adequate pneumothorax means compression of the actively diseased areas in the lung and closure of cavities. The pneumothorax that markedly decreases the cough and sputum, brings the temperature to normal, and causes the patient to gain forty pounds in weight, but does not close the cavity, is not adequate. It is unnecessary to say why this is so and to bore you with statistics showing the danger to patients of such unclosed cavities.

You know, too, how frequently adequate pneumothorax is prevented by adhesions. Ralph Matson, who presented this subject here fully five years ago, reported 20 per cent of pneumothorax attempts entirely unsuccessful because of diffuse adhesions, 40 per cent entirely successful, and 40 per cent partially successful with ultimate failure because of partial adhesions. Peters and Cornish, before this organization, have cited comparable figures. It has further been shown that ultimate recovery in these cases having adequate collapse is twice as frequent as in those cases having only partial collapse, and conversely the number of those with partial collapse reported as dead of tuberculosis after a definite interim, is over twice the number dead of tuberculosis in those cases with adequate collapse.

The 20 per cent with diffuse adhesions must, of course, be treated by more or less radical surgical means. The 40 per cent with partial pneumothorax furnish a problem which is being handled in several ways.

First is the use of high-pressure pneumothorax to stretch adhesions. The smaller string-like adhesions are susceptible to stretching. Larger adhesions have occasionally been stretched by prolonged high-pressure pneumothorax. I have seen no statistics showing the percentage of such cases that succeed to eventual cure. My experience has been that they are few in number.

There is some danger to the patient in this procedure. The Matsons, after use of it, found spontaneous pnuemothorax 40 per cent more common than in ordinary pneumothorax treatment. Another danger is spreading of infection or hemorrhage from the open cavity while the stretching process is going on over a period of months. Most patients develop a moderate or marked mediastinal displacement and some compression of the contralateral lung, with reduction in vital capacity. Certain patients develop mediastinal herniation and high pressure must be discontinued. Finally, we do not know that the ultimate result will be good.

We do not know, to return to my opening theme, that there will be restoration of lung function in any degree after high-pressure pneumothorax. It is often necessary to collapse undiseased lower lung completely to accomplish high-pressure collapse of an upper-lobe cavity held by adhesions, and this must be maintained long enough for cavity healing. Permanent atelectasis of undiseased lung may occur. Many of these cases, after long-continued pneumothorax is stopped, have marked mediastinal displacement toward the treated side or fail to expand fully, so that thoracoplasty must be done. I feel that three to six months is sufficient, probably too long, a trial of pneumothorax in the presence of adhesions before something else should be done.

The next common method of treatment in the presence of adhesions is phrenicectomy. This is occasionally sufficient to close the cavity, be it at the top, middle, or bottom of the lung. However, I am coming to believe that if an apical cavity alone is being treated and the balance of the lung is good, a hope of eventual restoration of function to the lung should postpone phrenicectomy until other methods have been tried. Scaleniotomy has been too little used to judge of its results.

Thoracoplasty is the final sacrifice of the lung. In certain cases adhesions will admit of no other treatment. But I have had the experience of watching total thoracoplasty, or lung sacrifice, in a case which in my opinion would have yielded well to pneumothorax after what

appeared to be a comparatively simple pneumolysis. This procedure would have offered a hope of lung restoration.

It is the fear of pneumolysis which has made it, in the minds of most medical men and phthisiotherapists, the last procedure to be considered when dealing with adhesions. This fear is, I believe, as unfounded as that which delayed so long a proper general use of pneumothorax. We can all remember this period in the history of pneumothorax, when our bugaboo was the danger of spontaneous pneumothorax, of pleural shock, of air embolism, of undue strain on the opposite lung. We have finally found that none of these dangers is in any degree comparable to the dangers to the patient of not treating his disease with pneumothorax.

Our bugaboo with intrapleural pneumolysis is the danger of hemorrhage, of empyema, of acute pleurisy with effusion, of cavity rupture, of shock. Before discussing these operative complications, let me say that none of these dangers is comparable to that of failing to secure adequate pneumothorax.

Intrapleural pneumolysis, briefly, may be done by the open or so-called closed method. Both methods have succeeded in closing cavities and effecting clinical cures. The open method consists in cutting the adhesions or pleural attachments after they have been exposed to direct vision by means of rib-spreading after an intercostal incision; by means of rib resection and pleural incision; or by means of raising a flap of costal cartilage and incising the pleura. The published results of O'Brien, who had treated sixteen cases by the open method, indicated eleven (or 68 per cent) successes.

The method in more general use is the so-called closed method, which consists in cutting adhesions with the cautery or electrocoagulation under indirect vision given by a thoracoscope passed between the ribs, through a small puncture wound, under local anesthesia. Several instruments have been devised for this purpose. I originally used the Maendel-Kornitzer instrument, which is a modified cystoscope equipped with electrocoagulation and cautery. This is a single instrument giving indirect vision at an angle of about 30 degrees. A similar instrument, but without cautery, equipped with double hemostat for clamping the adhesion, is the Cutler-Davidson, recently marketed. The instrument most in use is the Jacobaeus-Unverricht, which has a thoracoscope giving right-angle indirect vision and a separate unit for cutting with cautery, which is inserted at a separate intercostal space. Matson several years ago devised a different cutting unit which uses the endotherm and devised an intrathoracic hemostat for clamping the adhesion when necessary. In most of my cases I have used the Jacobaeus-Unverricht method with cautery, but in some recent cases I have used electrocoagulation as well.

A summary of 831 cases treated by this method at the hands of Jacobaeus, Unverricht, Matson, and Welles, shows 73.8 per cent, successes in cavity closure, 6 per cent serious complications, 10 per cent mortality. Cornish, of our own Association, has, I am sure, had similar success. Numerous reports of smaller series of cases showing similar results are available.

In my experience, two days usually, or occasionally one or three days, is sufficient time to hospitalize cases operated upon. If only thoracoscopy or study of the pleural cavity is done, one day or less is sufficient.

SELECTION OF CASES

Every case of pneumothorax with unclosed cavities held by adhesions, should be considered for intrapleural pneumolysis. Those with very small pneumothorax pocekts or total adhesions over the cavities are at once ruled out and will be very apt to come to thoracoplasty. Separate adhesions, whether string-like, band-like, or sheets, must be carefully studied under the fluoroscope and by stereo-roentgenogram. These are not infallible. Small adhesions are frequently not shown. Adhesions appearing as strings are frequently found at operation to be bands or sheets of adhesion with thickened edges. The presence or absence of lung in the adhesion cannot be determined with any certainty by x-ray. Therefore, we must, in a case offering possibility of pneumolysis, look into the chest with the thoracoscope, which is almost as simple a procedure to the patient as a pneumothorax refill.

CONTRA-INDICATIONS

Acute empyema is a definite contra-indica-

tion. Chronic tuberculous empyema is usually a contra-indication because adhesions cannot be easliy differentiated from adjacent lung. Otherwise I know of no contra-indication except a hopeless general condition of the patient.

COMPLICATIONS

Almost every case has subcutaneous emphysema after operation; but it is of no serious consequence if the patient is given pneumothorax refill before expansion of the lung can occur.

Serous effusion was shown, in Welles' 1932 report of 141 cases, sixty-four times, there having already been effusion in thirty of these. Matson reported it in 1929 forty-eight times in 100 cases. It is usually of no moment. In one of my cases there was very high fever for some time and probably very much thickened pleura, as indicated by gradual contraction of the chest. In another case the patient was not fluoroscoped for some time after operation and basal adhesions formed in the fluid, which may undo the good of the operation although the apical cavity was freed. These patients with fluid often must be aspirated early and given refills of air.

Acute empyema (mixed infection) occurred in two (1.5 per cent) of Welles' cases. Both are well after aspiration treatment without drainage. Chronic empyema occurred in six cases (4 per cent). None of these had to be drained. Matson reported a somewhat higher percentage of chronic empyema. In our series of fifty-nine cases, three have developed tuberculous empyema without mixed infection. One came to thoracoplasty which would otherwise have been his lot. Two had bilateral disease and died from extension in the other lung.

Hemorrhage is no longer a serious complication. Welles reports none in 141 cases. Earlier reports show a very small percentage. In this series of fifty-nine cases there have been three. Two patients are well, their lungs expanded and functioning. One patient is clinically well, his cavity closed, but developed basal adhesions.

Spontaneous pneumothorax is infrequent. Welles and Matson report none. In this series it occurred in three cases, all with extensive bilateral disease which it was hoped to treat with bilateral pneumothorax. In all cases it developed several days after the operation. Cavity rupture is very rare. I have seen no report of it. Welles reports lung puncture in one case, but there were no sequelae. No rupture of cavity or puncture of lung occurred in this series.

In our series of fifty-nine cases, cavity closure has resulted in thirty-seven cases, or 62.7 per cent.

However, we have attempted something which I have not seen reported in the literature, i.e., the perfecting of bilateral pneumothorax by intrapleural pneumolysis. Of these fifty-nine cases, there were twenty-seven in which pneumolysis was attempted on one or both sides, bilateral disease being present. Cavity closure on the operated side was secured in twelve cases, or 44.4 per cent. Seven cases, or 25.9 per cent, have been clinically successful under bilateral pneumothorax, and we look for eventual restoration of lung function in these cases. In one case both lungs are fully re-expanded and the patient has been working one year. Without bilateral pneumothorax aided by intrapleural pneumolysis on one or both sides, these individuals would have been doomed.

In bilateral pneumothrax, a selective collapse of the diseased portion of the lungs must be obtained. Therefore, when adhesions are present, the success or failure of intrapleural pneumolysis may spell life or death to the patient.

Of the other five cases in this group, two have remained clinically so well that the contralateral lung may not need compression. In two cases contralateral pneumothorax has failed because of diffuse adhesions, and in one of these, at least, some form of plastic may be available after the collapsed lung has been restored to function. In the remaining case, the patient will die because of failure of contralateral pneumothorax and extending disease in the contralateral lung.

Subtracting this group of bilateral cases (twenty-seven) from the total (fifty-nine), we have then thirty-two of the unilateral cases, in twenty-four of which, or 75 per cent, there was cavity closure.

Of these twenty-four in which cavity closure was obtained, twenty-three or 71.8 per

cent of the unilateral group are clinical successes. In one case the outcome is in doubt. In one case the lung has been re-expanded about two years and the patient is well. The remainder are clinically well under continued artificial pneumothorax.

In one additional case, classed as a failure, the apical cavity was freed entirely of adhesions, but remains partially open near the hilum after four months. Mediastinal herniation into the other lung prevents pressure pneumothorax, but we feel this cavity will eventually close.

SUMMARY

To summarize briefly:

1. Intrapleural pneumolysis offers the possibility, through adequate artificial pneumothorax, of restoring the tuberculous lung to comparatively normal function.

2. Adequate pneumothorax means collapse of cavities and actively diseased lung.

3. When adhesions are present possibility of intrapleural pneumolysis should be considered, before other measures, after not more than three to six months trial of pneumothorax.

4. The dangers of serious complications of intrapleural pneumolysis are not comparable to the disadvantage of prolonging ineffective treatment.

5. In thirty-two cases of unilateral pneumothorax in this series, cavity closure occurred following intrapleural pneumolysis in twenty-four or 75 per cent. Clinical success without other treatment followed in twenty-three or 71.8 per cent of the unilateral group.

6. In twenty-seven cases of bilateral disease, cavity closure occurred in twelve cases, or 44.4 per cent. In seven cases, or 25.9 per cent, clinically successful bilateral pneumothorax was established by means of intrapleural pneumolysis on one or both sides.

7. In four cases, bilateral intrapleural pneumolysis has established successful bilateral pneumothorax of selective type, such that eventual restoration of both lungs is anticipated.

My thanks are due to Dr. Fred G. Holmes, Dr. Howell Randolph, and Dr. E. W. Phillips, who have referred many of the cases discussed.

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FOOD ALLERGY

(A Resume of the Literature; Personal Observations.)

ORVILLE H. BROWN, M. D.

(Continued)

DIAGNOSIS

Since the treatment of allergy to foods consists in removing from the diets those foods which cause clinical reactions, it is necessary to know which those foods are; the diagnosis must rest upon a combination of skin testing and clinical reactions.

The skin tests are made by the scratch, intradermal, or patch, method. The intradermal is more sensitive than the scratch; for certain cases and foods the patch may be preferable to either of the others. O'Keefe and Burgess had 30 per cent of scratch reactions and 87 per cent of intradermal reactions in asthma. All authorities agree that, especially in older persons, the skin tests may not be reliable. Either positive or negative reactions may be meaningless. The trouble usually is that a food causing trouble will give no skin reaction. Alexander and McConnel found that certain areas of a patient's skin reacted, whereas others would not react, to a substance; the skin may react at one time and not at another. The back and trunk are more sensitive than the thigh and the thigh is more sensitive than the forearm.

In 1922 I gave to the Society for the Study of Allergy a plan of clinical testing which I named the "food-addition method." This consists in putting the patient on one food at a time and, whenever one is found on which he makes steady improvement, he is kept on that usually for 24 to 48 hours; then another food is added; if it causes trouble it is eliminated; in case it does not cause trouble he has two safe foods to eat. The tests are continued until the reactions of a sufficiently large number of foods are obtained.

Rowe, some years after the presentation of the "food-addition method," introduced what he termed "elimination diets," which was but a modification and elaboration of my diet method. His method was designed to give the patient a balanced diet during the clinical testing, which of course my method does not give until a sufficient number of foods are tested, unless a patient is not sensitive to milk and takes it. This, however, I do not regard as important in most cases.

Several clinicians have suggested the importance of the patients' keeping diaries recording all foods eaten and the symptoms. From this it may be possible to arrive at conclusions relative to the offending foods. The proposition is more difficult than it might seem for the reason that, when a person is actually sensitive and having reactions, almost everything he eats will exacerbate his symptoms.

Since it is nearly always a summation of reactions which is producing the conditions of which a diagnosis is being attempted, it is just as important to know if other than food proteins or other toxins are having effects. The consensus of opinion now seems to be that bacterial proteins do serve as allergens. At any rate, since bacteria may set up a gastrointestinal inflammation and thus be a predisposing cause of allergy by interfering with digestion, it is important to find all foci of infection in order that they, too, may be eliminated or at least controlled. This past year I had striking proof of the importance of this. I had worked on an asthmatic for a year and a half without greatly benefiting him. In spite of severe asthma and because it was beginning to seem necessary, we then had a severe stricture dilated. The patient was soon much improved. Then we took courage and had a transurethral resection of his prostate. He has now had nearly perfect relief from his asthma for the better part of a year. The weight of authorities is against radical or hasty operative procedures. I believe, whenever decidedly active foci can be removed without too much shock and risk, and the patient's suffering is severe and uncontrollable, one should not be too cowardly about recommending operation. I repeat that I have the impression that bacteria are often at the bottom etiologically of this hereditary-digestive-endocrine-metabolic-immunologic disturbance that we know as allergy, and therefore bacterial foci should be looked for and eliminated when good judgment dictates they should be. A patient of mine who has only recently obtained relief from an intractable and maddening pruritis thinks her recovery began with "colonic flushings" which she took at her own initiative. I

am not sure but that she is correct. Later a return of pruritis occurred and gall-bladder drainage, coupled with dieting, has apparently done her much good.

Every allergic is a law unto himself. His problems are unlike those of any other allergic. Each case is in reality a special research problem.

A carefully taken history, with the thought in mind that there are discoverable reasons for the allergic state in each case, may be of inestimable value. Is his digestion below par? Is he overtaxing his digestion by too much food? Is his food prepared so that it is easy to digest? Does he eat too rapidly? Does he masticate his food thoroughly? Is he always fatigued and nervous when he eats? Are his teeth poor? Is he constantly swallowing bacteria from his gums or nasopharynx to set up a gastro-enteritis? Had he ever had a prolonged spell of illness before becoming allergic? If so, on what was he fed? Of what foods is he particularly fond? Of which foods does he eat the greatest amount? What foods has he observed to cause trouble? Inquiry should be made about all types of allergy and the various symptoms thereof. Alvarez especially has emphasized the importance of careful history taking.

Most important of all, I should say, is to have the patient's and his nurse's cooperation in the research. They must understand what is to be looked for. They must understand what his special part of the problem is. They must keep the physician informed of effects and with him be on the watch for causes. There must be no let-up in looking for etiologic factors that had not before been thought of in his case or, for that matter, in any case.

TREATMENT

The ideal treatment is to eliminate the food or foods responsible for the allergic reactions. Usually it is advisable, though not always necessary, to eliminate all the foods which contribute to the trouble. Pollens and other inhalants and infections may add to the trouble caused by food and should be discovered and eliminated or otherwise appropriately treated.

The difficulty sometimes experienced in finding the source of a protein causing the trouble, is illustrated by Balyeat's case of a child fed only on cows' milk and yet by skin test sensitive to wheat protein. It was finally found that the cows from which the milk for the child came were being fed upon bran. A change to milk from cows fed only on pasture, effected a cure of a severe eczema.

A number of clinicians have desensitized to foods by giving extremely small amounts of the food in question and gradually increasing it.

The absolute withdrawal of a food to which one is sensitized, for a sufficient length of time will desensitize one to it. I first reported this in 1922 before the Society for the Study of Allergy. Vaughan and Piness and Miller in 1933 reported that cases lose their sensitizations by staying off the foods for a time. I have obtained desensitization to one serious case of urticaria by the patient's abstaining from all his reacting foods for as short a time as two weeks; the next shortest time of withdrawal desensitization was about six weeks; another extremely severe case was desensitized in about five months. Other cases have required longer.

I have found the food-addition-diet method of treatment extremely helpful. An example of how this works: A woman with generalized pruritis was first put upon a strict diet of cooked foods and hydrochloric acid and pepsin with all foods. After a week of this regime she was no better. This plan often gives complete relief, or otherwise it would not be justifiable to waste the week. She was then skin-tested for all foods and inhalants. All drugs were eliminated. No foci of infection were discovered. She was placed upon a diet containing only those foods to which she showed no reactions. Still her pruritis continued—perhaps slightly improved. She was placed then on a buttermilk diet. The pruritis was no better and possibly was slightly exacerbated. She was tried on beef only, and on other single foods. Among them was C. P. dextrose; this made her decidedly worse. Her grape test had given an 18 mm. area of redness at the end of 24 hours. Her reaction to corn had been negative. She was then given corn syrup, one or two drams per hour. By the end of 24 hours she was positively improved. As she did not object seriously to the starvation diet, and she had a plentiful supply of adipose tissue, she was kept on corn syrup for 48 hours. Then she was allowed to have rice water, without untoward effect. After 48 hours she

was allowed a small amount of canned milk with her rice. Potato chips, prepared cereals, broiled beefsteak, apple sauce, vegetable soup, pureed vegetables, and so forth, were added one at a time. Whenever she had an exacerbation of her pruritis, she was likely to know from which food it came, and that food was again eliminated for a time. In this particular case we believe that high enemas, which she took on her own initiative, were of much assistance in her recovery. She is constipated almost to the point of obstipation. She reported that much putrid fecal material was washed away by the high enemas.

After a person has been relieved of symptoms, comes the task of teaching him how to eat so that he has the best chance of staying well. I have a mimeographed page of instructions which is given a patient at an early visit. This serves to give him what I consider essential principles of diet.

Allergists have relatively little to say on the question of the proper general principles of diet. Piness and Miller say the total protein dosage must be kept below the patient's tolerance for protein. Reid remarks that social, marital, and economic matters must be given consideration. Alvarez writes that eating when fatigued, nervous, excited, or with a "cold" or other general upset, may be harmful. My own opinion is that it is difficult to over-emphasize the importance of proper digestion in relieving and preventing the return of allergic phenomena. I would call attention to the number of authorities, cited in the chapter on etiology, who believe that inadequate digestion has much to do with the cause of allergies from food . Then next I would call attention to the large amount of work, notably by Canon, which indicates that the digestion apparatus is extremely sensitive to disturbing influences. A cat's digestion, Canon demonstrated, came to a standstill if the cat was made angry or teased moderately or in any way much upset. It has also been fairly well established that the human behaves in this respect much as does the cat.

Perhaps the worries incident to the economic situation at present account for the apparently unusual number of sensitization cases many of us have lately been seeing.

On the above plan, a great many cases work out satisfactorily; there are those, especially those of long standing, or of marked severity, in whom results are far from satisfactory. It is in this group that van Leeuwen and others used tuberculin and still others used stock vaccines or other foreign protein. Results come sometimes when least expected. I have tried very little of the non-specific therapy. It is in this group of "no-man's land" cases to which it has seemed to me the urinary proteose therapy of Oriel's is applicable and worthy of a trial.

Since proteins, split-proteins, and other possible chemicals are eliminated in the urine it seems entirely rational that a product might be obtained from the urine which would be a specific antigen and which would be analogous to pollen extracts and other antigens which have been beneficial in therapy. Oriel's and the Guy's Hospital, and other reports indicate good results from its use. Burgess treated twenty-six cases with good results in certain cases. Psoriasis was often not benefited.

Probably the best support for Oriel's claim regarding urinary proteoses is the work of Jansion, Giard, and Martinaud, who claim that allergics eliminate through their urines "endo-antigens" and "exo-antigens" which cause sensitization reactions. They take urines under antiseptic precautions, adding to each cubic centimeter one drop of phenosalyl, or iodized alcohol. They mix these thoroughly and allow to stand for five to thirty minutes and then inject 0.5 to 5 cc. subcutaneously or intramuscularly, in ascending doses, for the purpose of producing desensitization. Treatment was successful in 336 of 372 cases of migraine, hay-fever, asthma, pruritis, urticaria, prurigo, strophulus, eczema, and psoriasis. The inference is that Jansion and his associates are working with the substances which Oriel terms proteoses.

A report from the British Asthma Research Council says that small intravenous doses of one's urinary proteoses tend to desensitize one to one's antigens; the treatment is satisfactory in some cases.

I have been using the urinary proteoses prepared according to Oriel, for about one year. Results in a few cases have been excellent. In other cases there has been absolute failure. In still others, there has been a lack of cooperation on the part of the patients, which may or may not bespeak failure for the proteoses.

Vasconcellos extracts the antigens from the feces and prepares solutions therefrom for injections. He reports good results.

The literature contains numerous references to the use of peptones, a small amount by stomach one-half to one hour preceding meals, and even by vein. Certain workers report good results. Probably a number of equally careful investigations have reported failures, or even aggravation of an allergic state. One wonders if variations in the chemical character of the proteins may not account for the variable results. Lambert, Ancel, and others say that a small amount of a food, drug, or peptone, an hour before meals, may prevent allergic reactions from that meal. Firgau says a small amount of the offending foods an hour before a meal when continued indefinitely, desensitizes to them.

Luithlen introduced the use of specific peptones—a peptone prepared for each protein. Urbach has followed up the preparation and use of specific proteins with aparently good results. Markin claims that using only foods for which specific peptones are prepared and giving the specific peptones 45 minutes before meals, desensitizes in about two weeks. We shall probably hear more of specific proteins in the future.

Richet, Jr., and Cander have recommended the use of liquid petrolatum, a dram preceding and a dram in the middle of each meal, and claim that symptoms often disappear within a few days. This procedure seems rational to me. I believe its good effect, if any, is likely due to the slight laxative effect in overcoming bowel stasis and a growing of bacteria high up in the canal. Bastedo recommended laxatives and high-up enemas in the alimentary canal.

Many authorities agree with Sansum and myself in the use of digestants. Allen writes that thorough digestion of proteins before absorption is a logical method of attacking the allergy problem. My own results are that allergic states of short duration are often promptly checked by the use of digestants. The longer a process has existed, the less likelihood is there that it will respond to the use of digestants and nothing more. I practically always prescribe the digestants and manipulate the diet and await results. Occasionally nothing more needs to be done. Sansum especially advises pancreatin; I have particularly favored either citric or hydrochloric acid, with or without pepsin.

Beckman's good results with nitrohydrochloric acid must be due, I suspect, to the aid it gives to digestion. Likewise, the ketogenic diet, with the resultant acidosis, may be beneficial because the increased acid in the tissues may tend to stimulate a better secretion of stomach acid. Any change of diet may be of help; some of the good of the ketogenic diet may be due to change of diet. Colby, Ferguson, Gilmore, and others claim beneficial results from the intravenous use of hydrochloric acid in asthma.

References to the administration of vitamins in allergic states are found here and there distributed through the literature. An isolated report or two grows a bit enthusiastic about the good produced by the use of vitamins. I have had undoubtedly beneficial results. If vitamins are concerned in causing the malmetabolism, use vitamines; if the endocrines are to blame for the deranged metabolism, use endocrines; if bacteria are at fault for a disturbed metabolic-immunologic state, remove foci of infection, sources of toxemia, and use vaccines.

Many authors comment upon the importance of proper cooking of foods. In some instances cooking at high temperatures for three to six hours renders a food, which has been causing trouble, relatively harmless. My own observations are that raw foods are decidedly more prone to cause trouble than are cooked foods. Since vitamins are important and prolonged cooking, especially at high temperatures, tends to destroy vitamins, the object of cooking usually should be to make food easy to digest. Occasionally for short periods, even though vitamins are destroyed thereby, it may be advisable to cook for the sake of producing a chemical change in the protein so that an allergenic protein becomes non-allergenic. I have ordinarily used prepared cereals and potato chips, melba toast, evaporated milk, and the like, with the thought in mind that in their preparation sufficient heat has been applied that allergenic principles may have been sufficiently changed to render them less allergenic than when used in the usual way. Idle and Thornburg mix the cereal and milk and then cook for prolonged period and find that such is often well borne.

Wherry speaks of an abundance of water internally in eczema as being highly beneficial. Stuesser, experimenting with an asthmatic, tried various treatments and concluded that large quantities of water were beneficial.

Astonishingly good results were reported by Priham from the use intravenously of a vegetable protein in peptic ulcer.

The recognized beneficial effects of dry climates upon allergics is explained by Arnold on the theory that lack of humidity reduces the permeability of mucous membranes.

The use of glucose freely in allergic states, for the purpose of keeping up the glycogen store in the liver, is regarded by numerous writers as of much importance. Mutzyer found it highly beneficial to asthmatics during the paroxysms, when given intravenously in large amounts. Gay uses dextrose as a starvation diet and then follows the plan suggested by me in the food-addition diet. I would warn that dextrose from grape or from corn may contain enough of the source protein to cause this to be kept in mind. I wonder if cane and beet sugar may not also have their source proteins.

Piness warns against a too liberal use of morphine in asthmatics, as the inability to clear mucus from the bronchi may lead to suffocation.

Guy, Machley, and others stress the importance of treatment with endocrine substitution or other therapy. Both emphasize thyroid feeding.

Fever therapy has been tried by various workers, notably by Fineberg, but in the main the results seem to be scarcely good enough for the trouble and discomfort.

Sztark gave allergic nursing infants hypodermics of mothers' milk, with beneficial results. The method of desensitization would be both specific and non-specific.

In non-specific desensitization many agents have been used; a few of them are tuberculin, milk, stock vaccines, typhoid vaccine.

PROBLEMS OF ALLERGY

Block says the problems in allergy consist of: Irregularities in skin tests; lack of knowledge underlying the effects of treatment with specific antigens; what it is that is passed from parent to offspring that constitutes hereditary tendency; whether there is a uniform fundamental abnormality in all allergies; whether there is abnormality of the endocrine system or of the vegetative nervous system; causes of low blood-sugar, low blood-pressure, slow pulse rate, eosinophilia; the exact relationship between allergy, anaphylaxis and immunity; why there is a difference in reactivity of organs in different individuals and in the same individual at different times.

The problems which have been suggested to me by the reading of these 500 or more papers are: What is the tissue change that causes edema and eosinophilia and perhaps a muscle spasm, in an allergic reaction? When the protein or split protein meets a sensitive tissue, what happens to the foreign protein? Does the sensitive tissue possess antibodies or enzymes, or antibodies with the immunologic characteristics of enzymes which attack the foreign tissue and destroy it so rapidly that the poisonous histamine or histamine-like bodies are so generously produced that the very tissues producing them are poisoned by them? Does the liver serve primarily as the destroyer of the foreign proteins which gain access to the body? Is sensitization a condition or state of an organ in which that organ has acquired the ability of the liver to destroy foreign protein? If so, is this due to a failure on the part of the liver fully to perform its task of destroying foreign protein? Is a liver fully stored with glycogen more competent to destroy foreign protein than one depleted of its glycogen store? What are the Prausnitz-Kuestner antibodies? If the difference between immunity and allergy is free antibodies in immunity and fixed antibodies in allergy, why are there antibodies in the serum in allergy which will passively sensitize the offspring or an area of skin into which the serum is introduced? Does not the suggested relationship between immunity and allergy lead one to think that in both conditions antibodies are really enzymes, which perform best, or perhaps only, by the aid of complement and are for the purpose of destroying foreign protein? In case of allergy to coal-tar products, quinine, and other non-protein chemicals, is it not possible that the body produces enzymes to destroy these chemicals just as may happen against proteins? Is there a link between antibodies and metabolism? Does an allergic have a deficiency in metabolic activity? Does he

fail to produce antibodies in the liver or elsewhere? In other words, does a non-allergic individual have antibodies in all tissues and no one tissue has the brunt of destroying the foreign protein? Or does the allergic individual have a few antibodies in all tissues, and an excessive number in one area? Why does a person, as is often the case, have asthma and no eczema; and, at another time, eczema and no asthma, or alternation of other types of allergy ? Is there any special difference in absorption of incompletely digested proteins between allergics and non-allergics? Why do decomposition and autolyzed products of protein appear to produce, based upon my own observations, such marked allergic reactions? What happens when an antigenic food is completely eliminated from an allergic's diet for a time, that permits him again to eat that food in small amounts without reaction? Does the store of incompletely digested protein become gradually and slowly destroyed and eliminated and thus, after a time, get below the individual's tolerance level and allow a small amount of that protein to be cautiously and safely eaten? What happens in a pollen desensitization through gradually increased hypodermic injections of pollen extract? What happens when an individual sensitive to a number of food proteins has a focus of infection removed and suddenly, or at least fairly promptly, is relieved of his allergic phenomena? When a peptone, given forty-five minutes before a meal, prevents allergic reactions what has happened? What happens when, after an operation on an allergic individual, his symptoms disappear for a number of weeks?

(Discussion of this paper will appear next month.)

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tbalespoonsfuls of Casec. Within a day or two the diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six tablespoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

NEW MEXICO SURVEY

The health survey of this state sponsored by its Tuberculosis Association and directed by Dr. Carl E. Buck, Field Director of the American Public Health Association, came to an end on April 30th. At the time of writing, a tabulation of the results from the first three counties surveyed has been made by Doctor Buck, who draws a few tentative conclusions in regard to some aspects of the survey.

In the three counties 584 adults presented themselves voluntarily for a health examination. Thirty of these, or 5 per cent, were definitely diagnosed as having active tuberculosis. In 334 others the condition was regarded as suspicious on clinical grounds. The x-ray readings have not yet been correlated with the clinical findings. Later, no doubt, a larger proportion of definite diagnoses will be possible.

Adults living in contact with those school children who had been found to have a positive Mantoux test were invited to attend the clinics for physical examination. In response to this invitation 294 presented themselves and were examined. A diagnosis of active tuberculosis was made in 15 and another 15 were regarded as suspicious.

Mantoux tests were given to children of grade school age. The tuberculin used was furnished by the Trudeau Laboratory at Saranac Lake. A single dose of one-tenth milligram was given. Of 1,666 Spanish-American children 354, or 21 per cent, reacted. Of 1,229 Anglo-American children 134, or 11 per cent, reacted. The high rate of infection among the Spanish-American children is noteworthy, and stands in marked contrast to the comparatively low rate of active disease found among adults of the same race.

Blood was taken as a routine part of all adult examinations except in rare cases where objection was made to this test. The state laboratory examined specimens from 776 adults by both Wassermann and Kahn tests. No less than 74 were positive for syphilis. From this

it appears that active syphilis is at least twice as prevalent as active tuberculosis in New Mexico.

A more complete report of the survey will be available at the meeting of the New Mexico Medical Society in July.

However, a report has already been received from Miss Mary Emma Smith, director of nursing activities of the National Society for the Prevention of Blindness, who, working under the direction of Dr. Paul Mossman, of the Office of Indian Affairs, made a study of vision among the school children of the state, and gave much valuable advice regarding lighting of the school rooms. A total of 1,474 pupils were examined by both physician and nurse. Of this number 21, or 1.4 per cent, possessed glasses. Eye conditions requiring follow up care were found in 388. A further indication of the need for public health activity among the schools is seen in the following table: :

TABLE SHOWING NUMBER WITH SPECIFIED VISION

	Number of Cases Having Specified Visual Acuity		
	Worse Eye	Better Eye	
Visual Acuity (Snellen)	Uncorrected	Uncorrected	With-Correction where worn
20/20		16	19
20/30		6	8
20/40		4	5
20/50		2	3
20/70	24	16	13
20/100	11	5	4
20/200	8	4	2
Worse than 20/200	12	2	1
	55	55	55

This group of 55 pupils, whose visual acuity is 20 70 or worse, in the worse eye, is derived from the 1,474 vision tests above mentioned. Only 10 of the 55 pupils were wearing glasses, Miss Smith believes it probable that in most of the remaining 45 cases improvement could be effected by the use of glasses.

PRESIDENT'S ADDRESS

WOMAN'S AUXILIARY TO THE ARIZONA STATE MEDICAL ASSOCIATION

MRS. C. R. SWACKHAMER
Superior, Ariz.

(Delivered before the Annual Banquet of the Arizona State Medical Association and the Woman's Auxiliary, at the Forty-third Annual Session of the Association, held in Prescott, Ariz., June 1, 8 and 9, 1934.)

Mr. Toastmaster, Members of the Medical Association, Auxiliary and Friends:

First of all, I want to thank the Medical Association for this opportunity and the honor of appearing before you as President of the Medical Auxiliary. I take it as a complimentary recognition of our position as helpmeet to your society.

There are physicians today who can, or may, look back longingly on the good old days of administering lotions and potions, and applying plasters and salves. But the new conception of the scope of a medical career has so widened its horizon and increased its responsibilities, that the present day physician who takes his profession seriously, **must** feel burdened beyond endurance with twenty-four hours of service.

The chief difference, as I understand it, between the old idea of medicine and the new, is the emphasis upon preventive medicine. It is not enough to heal the sick. Health maintained is better than health restored. As one physician expresses it, it is far better to build a wall along the edge of the precipice than to send an ambulance to the bottom **after** the crash. There is a necessity for the study of the best kind of wall, and the speediest means of building it. While the state organization studies how best to erect this structure as a whole, the county units contribute their share of bricks and mortar, as does also the Auxiliary.

The Woman's Auxiliary is furthermore needed to act especially as a medium between the profession and the public, and to interpret the thought of the medical experts to the layman.

Just as the County Health Officers and Coun-

ty Medical Society study the local health problems, so should the Auxiliary study them, but never act without the approval of the medical society. Education is the answer to many preventable diseases, and the Auxiliary is the best ally. Every Auxiliary should have an advisory committee, appointed by the medical society. to direct its activities, and should meet with them to map out a feasible plan, when occasion arises. For instance, in a diphtheria epidemic, every member of the Auxiliary should be fully informed on the subject of the immunization against diphtheria. A couple of simple leaflets to refresh her memory—she won't have time to read more—then comes the question, "How many auxiliary members are active in other organizations—PTA, Y.W.C.A., Women's Club, Church Societies, American Legion Auxiliary?" Ask these members to arrange to have a physician invited to address each organization in the near future, with good publicity. The doctor needs only to present himself at the meeting with his speech in his hand or his pocket, deliver his address, and go on his way rejoicing.

This educational work prepares the ground for a good public meeting, to which the entire community is invited. Music, motion pictures from the State Health Department or other sources, with good speakers, and careful advance publicity, should draw a good audience —but one never knows. One may engage all the crooners and movie stars, and all the seven arch-angels to address a meeting, but one cannot engage an audience to listen to them. A good plan would be to work up an audience through the schools. The Auxiliary bears the brunt of this activity, interviews the teachers and speakers, selects the films, engages the operator, out devils the printer's devil, and the busy doctors' share need be only the approval of the details. The expense of these meetings is small, and the Auxiliary has a thousand and one ways know only to the modern woman, to meet this. This is one way of educating the community, and a sure means of converting the anti-everything. This is only one of the many educational problems the Auxiliary can solve for the doctor, but is cited as a concrete example of the principle on which the Auxiliary is meant to work, and is working in many communities.

In Superior, this past year, working alone as an Auxiliary member, I phoned Mr. Forrest Doucette, and arranged for him to show several health films and give a lecture to the high school, eighth grades and parents. I also sponsored a Health Essay Contest, based on articles in the Hygeias, and distributed 100 Hygeia magazines through the schools, among the homes, for reading and instruction. Last of all, I kept Hygeias in the circulating library, beauty and barber shops all year. I am sure other wives in small communities can do the same.

The Auxiliary, acting in its dual capacity as a junior partner to the Medical Association, and as an active leader in women's activities in the county, prepares the soil, sows the seed, weeds and waters the growing plants and in the fullness of time, the doctor steps in and harvests the crop. So with proper direction and training, the Auxiliary may become a powerful instrument in the hands of the profession.

The public is crying out for health information, and in place of the falsities offered by the quack, the Auxiliary should be constantly on the alert, to substitute scientific facts.

Diet fads are one of the staples of current conversation, and their informers are always trying to worm their way into public confidence, by the offer of free lectures before women's organizations. A doctor's wife can forestall such delusions of the public by merely asking "Is he a physician? Where has he studied? What degree has he taken? What does he know of scientific nutrition?" While one cannot attack a quack, a few pointed questions often establish his true status. Every doctor's wife comes in contact with these problems at social gatherings, and often wishes she knew how to answer them tactfully.

The Auxiliary can exercise a powerful influence in the health teaching in the schools by distributing the American Medical Association publications and the five Auxiliary study envelopes on such subjects as: "Common Defects in Children," "Communicable Diseases," "Diphtheria," "Small Pox," "Typhoid Fever," "Measles," "Whooping Cough," "Scarlet Fever," and one on "Milk.' It can also use mon-

(Continued on page 215.)

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PROGRAM

Fifty-second Annual Session New Mexico Medical Society.

Las Vegas, N. M.

July 19, 20, 21, 1934
The Elks Club

Thursday, July 19, 1934.
Opening Session.

10:00 A.M. President's address by Dr. Charles F. Millikan, Clayton, New Mexico.

10:30 A.M. Dr. F. D. Garrett, El Paso, Texas: "Anaphylaxis—An important cause of obscure abdominal pain and digestive disturbances."

11:00 A.M. Dr. John H. Vaughn, Amarillo, Texas: "Cancer" with lantern slides.

11:30 to 12 Discussion of papers.

12 to 2 P.M. Luncheon and round-table discussion as guests of New Mexico State Insane Asylum. Dr. A. B. Stewart, host.

2:00 P.M. Dr. M. K. Wylder, Albuquerque, New Mexico: "Prevention of Heart Disease in Children"

2:30 P.M. Dr. Casper Hegner, Denver, Colorado, Professor of Surgery, University of Colorado: "Surgery of the Abdomen."

3:00 P.M. Dr. O. H. Horrall, Chicago, Illinois, Chief Surgeon, Chicago, Burlington & Quincy Railroad: "Trauma of the Joints and Cartilaginous Repair."

3:30 P.M. Dr. G. Heusinkveld. Denver, Colorado, Associate Professor Obstetrics, University of Colorado: "Obstetric Problems."

Thursday, July 19, 1934.

4:00 P.M. Dr. H. W. Winsett, Amarillo, Texas: "The Schilling Blood Count."

4:30-5:30 Discussion of Papers.

8:00 P.M. Public Meeting.

9:00 P.M. Annual Smoker.
Agua Pura Company Cottage in Gallinas Canyon.

Friday, July 20, 1934

9:00 A.M. Dr. J. A. Britton, Chicago, Illinois, Chief Surgeon International Harvester Company: "Silicosis."

9:30 A.M. Dr. Harry Wear, Denver, Colorado. Associate Professor Genito Urinary Disease, University of Colorado: "Transurethral Prostatic Resection."

10:00 A.M. Dr. J. W. Kennedy. Philadelphia: "Indications for Vaginal Hysterectomy with Clamps."

10:30 A.M. Dr. L. A. Buie, Rochester, Minnesota, Proctologist, Mayo Clinic: "Hemorrhoids."

11 to 12 Discussion of papeas.

12 to 2 P.M. Luncheon as guests of the Board of Directors of the Las Vegas Hospital at Odd Fellows Hall.
Dr. Hugo O. Deuss, Chicago, Illinois: "Medical Economics,"—An analysis of the medical tactics of the social agencies in the Emergency Relief, The C. W. A., etc.

Friday, July 20, 1934

2:00 P.M. Dr. A. C. Scott, Temple, Texas, Chief Surgeon, Gulf Coast Lines Railroad: Subject later.

2:30 P.M. Dr. Frank Kelly. Chicago, Associate Professor of Medicine, University of Chicago, Rush Medical College. "Treatment of Pneumonia."

3:00 P.M. Dr. C. W. Mayo, Rochester, Mayo Clinic: "Appendicitis."

3:30 P.M. Dr. W. C. Finnoff, Denver, Colorado, Professor of Ophthalmology, University of Colorado: "Differential Diagnosis in the Common Eye Diseases."

4:00 P.M. Dr. W. W. Waite, El Paso, Texas: Pathology (Subject later).

4 to 5 P.M. Discussion of papers.
7:30 P.M. Annual Dinner Dance. Castaneda Hotel.

Saturday, July 21, 1934

9:00 A.M. Dr. C. F. Kemper, Denver, Department of Medicine, University of Colorado: "Congestive Heart Failure."
9:30 A.M. Dr. C. T. Burnett, Denver, Department of Medicine, University of Colorado. "Primary Anemia."
10:00 A.M. Dr. J. W. Kennedy, Philadelphia: 'Surgical Pathology of Peritonitis."

Saturday, July 21, 1934

10:30 A.M. Dr. Hugo O. Deuss, Chicago, Department of Medicine, University of Illinois: "Blood Dyscrasias—Agranulocytosis and Acute Leukemia."
11:00 A.M. Dr. L. M. Miles, Albuquerque, New New Mexico: "Gonorrhea in the Female."
11:30 to 12:30. Discussion of papers.

Scientific Exhibits

"Pathology of the Eye."—Dr. W. C. Finnoff, University of Colorado.
"Motion Picture on Intracapsular Cataract Extraction, 'Vacuum Cup Method'."—Dr. E. R. Crossley, Chicago Eye, Ear and Nose and Throat Hospital, Chicago, Illinois.
"Tularemia."—United States Public Health Service.
X-ray Exhibit.—Drs. Cathcart and Mason, El Paso, Texas; Dr. Van Atta, Albuquerque, New Mexico; Valmora Sanatorium.
Medical Illustrations.—Dr. Tom Jones, University of Illinois.
Commercial Exhibits by J. C. Durbin & Co., Denver; Southwestern Surgical Supply, W. A. Horr & Co., Eli Lilly & Co., Mulford & Co.

CORRECTIONS

In the April issue, in the article on "Childhood Tuberculosis as a Public Health Problem," by Dr. J. Rosslyn Earp, a typographical error which completely changed the meaning of a statement was made. On Page 29, first column, near the top, the sentence reads, "If we trust to our prejudices, then those of us who believe that a first infection makes the individual more susceptible to subsequent infection will take the opposite view."

The sentence should have read, "If we trust to our prejudices then those of us who believe that a first infection makes the individual less liable to subsequent infection will not expect to see a large number of adult cases developing from these apparently healthy, though admittedly infected, children. On the other hand, those who believe that a first infection makes the individual more susceptible to subsequent infection will take the opposite view."

The original manuscript read correctly, and the error was in proof reading.

On page 138, in Public Health Notes, also by Dr. Earp, in the second column, under caption "5," the dosage of arsphenamine should be 3.0-4.00 gms., instead of 3.00-4.40, as it reads.

President's Address

(Continued from page 213.)

ey to place the Hygeia in the schools where it is not subscribed for.

By espousing the cause of the yearly examination and by setting the example themselves, the Auxiliary can build up public opinion in favor of this practice.

We have had one example of the usefulness for an Auxiliary this past year, when the referendum to the Basic Science Law was to be voted upon at a special election. At the request of the Health League, the Auxiliary, feeling it a great privilege to assist in so worthy a cause, responded wholeheartedly. Quoting from a letter to me from one of the League members, I read: "The League feels that to the ladies of the Auxiliary, state wide, goes a large measure of this success."

Wherever an Auxiliary exists, it carries on such activities as those listed in our Yearly State Reports; helping to pass an ordinance making it compulsory for drug store fountains and lunch counters to use paper cups, sponsoring and equipping an open air school, x-raying needy children and fitting them with glasses, supplying milk and noon lunches to school children, donating money to a tuberculosis preventorium, giving health radio talks, supplying speakers on health subjects and working in all organizations trying to keep the doctor's point of view before the people.

Dr. Wm. Gerry Morgan of Washington, a past president of the American Medical Association; "Whenever the medical fraternity has held out a helping hand to the Woman's Auxiliary, they have been gratified to find that the work of the Auxiliary flowed along safe and helpful channels, and the results proved worth while."

In a profession as highly individualistic as medicine, there are bound to be frictions, jealousies and cliques, but doctors cannot persist

in feuds and antagonisms, if their wives are working shoulder to shoulder in the Auxiliary for the common good. A report from the president of one of our counties in Arizona this year says: "I believe that the greatest accomplishment of our County Auxiliary has been the creation of a spirit of good friendship between the wives of the local physicians." At first, it seemed that the Auxiliary could not possibly outlive the feeling of rivalry between the wives of the doctors, but with good programs and large attendance at our meetings and the close friendships which have sprung from these contacts in meetings, all demonstrate that our organization is necessary and that it will continue to be an institution for the good of the community.

At our State Medical Auxiliary this year, I have inaugurated the morning sessions, which I hope will prove interesting and popular and draw more members to them each year. This will reflect upon the State Medical Association, bringing in turn a larger attendance. As you know, it is the women who often bring their husbands to the meetings. Women enjoy wearing their best clothes, meeting old friends and making new ones, and their social instincts and aptitudes lend a charm to all the entertainments, which the men appreciate.

Finally, and most worthwhile of all, the Auxiliary seems to develop a closer bond between the doctor and his wife. She is no longer an outsider, jealous of his profession and his absorption in his duties. Her interests likewise are centered on health, and the great reward to both comes in the realization that they are working together in the cause of humanity.

Specialists in the study of child nutrition have been quick to recognize the value of milk as the mainstay of the child's diet.

"But what," asks the frantic mother of a youngster who dislikes milk, "can I do to make my child eagerly want that which he now rebels against?"

Today the doctor who is confronted with this query can solve this age-old problem by the helpful advice to mix Cocomalt with the milk. For by the simple addition of Cocomalt, milk not only becomes a delicious chocolate flavor drink—but its food-energy value is practically doubled. Cocomalt in milk provides extra proteins, carbohydrates and minerals (food-calcium and food-phosphorus). It is also a rich source of Vitamin D.

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TWIN responsibility FOR THE DOCTOR

IT is to her doctor that the mother looks—not only for her own well-being—but that of her child.

During pregnancy her own bones and teeth must be safeguarded; but so also must be the developing bones and teeth of the little newcomer. This is the doctor's twin responsibility.

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THE AMERICAN COLLEGE OF PHYSICIANS Will Meet in Philadelphia, 1935.

The American College of Physicians will hold its Nineteenth Annual Clinical Session in Philadelphia, April 29-May 3, 1935.

Announcement of these dates is made particularly with a view not only of appraising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1935 meetnigs.

Dr. Jonathan C. Meakins, of Montreal, Que., is President of the American College of Physicians, and will arrange the Program of General Sessions. Dr. Alfred Stengel, Vice President in Charge of Medical Affairs of the University of Pennsylvania, has been appointed General Chairman of local arrangements, and will be in charge of the Program of Clniics. Mr. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming Session.

SLEEPY SALTS.—The Bureau of Investigation of the American Medical Association reports that the public is now being bombarded with an advertising campaign for "Sleepy Salts," which are said to be put out by the exploiters of a mineral water, "Sleepy Water." The Sleepy Water Company has its headquarters at Hot Springs, Ark., and its "midwest headquarters" in Chicago. The company states that Sleepy Salts is about 15 per cent sodium citrate and citric acid (neither of which substances, of course, is to be found in any natural spring water). Government analysis shows that Sleepy Salts is essentially "horse salts" (sodium sulphate—Glauber's salt), with a proportion of epsom salt added. In other words, in buying Sleepy Salts one pays 75 cents for three and a half ounces of what is essentially a mixture of Glauber's salt and epsom salt. The high-pressure advertising campaign for saline cathartics is a pernicious influence on the public health. Fantus has well pointed out that these salts "belong among the habit-forming drugs and are responsible for a large proportion of cathartic habit." The same authority has called attention to the fact that such salines "are occasional accessory causes of death from ileus and appendical and other forms of peritonitis." The advertising pages of newspapers and the radio programs of the broadcasting stations are not subject to the control of the Food and Drug Act, for it is only lies on or in the trade package that are subject to the penalties of that law. This doubtless explains the campaign of misrepresentation and vilification on the part of many supposedly reputable newspapers and magazines against the proposed extension of the National Food and Drugs Act to cover collateral advertising. (Jour. A. M. A., May 5, 1934, p. 1915.)

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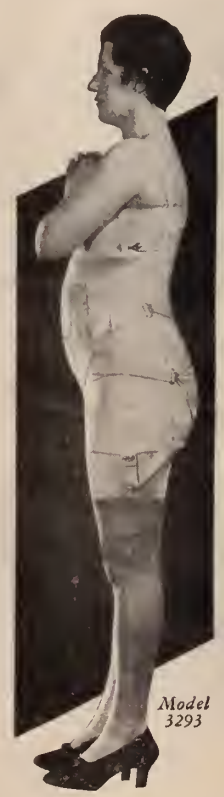

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VOL. XVIII. JULY, 1934 No. 7

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WHAT TO EXPECT FROM SURGERY IN TREATMENT OF EXOPHTHALMIC GOITER

W. L. BROWN, M.D.; C. P. BROWN, M.D.; and J. L. MURPHY, M.D.
El Paso, Texas.

(Read before the Nineteenth Annual Session of The Medical and Surgical Association of the Southwest, at El Paso, Texas, Dec. 7 to 9, 1933).

The purpose of this paper is two-fold. First, I wish to present a small series of thyroidectomies performed by us in the past seven years, giving as concisely as possible the end-results to date. Second, I am borrowing material from a large goiter clinic in the Great Lakes District to give you a better idea of what to expect from surgery in the treatment of exophthalmic goiter. After a careful resume of the present trend in the management of this disease, I must admit that the even near ideal is not reached yet. I have tried to attack the subject with an open mind—hence this paper is not to praise surgery or to condemn it.

Almost anyone discussing the subject of goiter must make himself clear upon the various types, since the management and prognosis vary with each. A simple classification is as follows:

(1) Colloid goiter, which needs no description.

(2) Adenomatous goiter, which may be toxic or non-toxic.

(3) Exophthalmic goiter, which implies a state of hyperthyroidism and is usually characterized by a uniform enlargement of the thyroid gland with hyperplastic changes of the epithelium lining the acini.

(4) Mixed adenomatous and exophthalmic goiter.

In this paper only the latter two classes will be discussed, since I am limited to surgery in the exophthalmic type. A word might be said as to the differentiation between a toxic adenoma and a mixed adenoma and exophthalmic goiter. There is no sure way of telling, but usually the mixed type will have a relatively higher basal metabolic rate and will occur at a younger age than the toxic adenoma. There are exceptions to this rule and only the pathologist can decide. Exophthalmos is not peculiar to exophthalmic goiter by any means.

In the small series of twenty-three thyroidectomies performed by us there can be no statistics of value, but a few points may be gleaned to give an idea of goiter as it exists in the vicinity of El Paso, and the end-results of the same.

This data has been accumulated from our own records, the hospital files, and from questionnaires recently sent out, as well as recent check-up of the basal metabolic rates on all patients available. The summary is far from complete, but is fairly satisfactory for the purpose. The first case was operated upon seven years ago and the last, six months ago.

Of the twenty-three cases, there were nineteen females and four males, the average age being 41.6 years, the youngest being 20 and the oldest 56. There were fourteen, or 60 per cent exophthalmic; five, or 22 per cent, toxic adenomas; and four, or 18 per cent, non-toxic adenomas. The average gain in weight (basis of ten patients reporting) was 21.4 pounds. The average pulse on admission to the hospital, including all types of goiter, was 101, while the average pulse on dismissal was 78. In considering the pulse on admission, it should be understood that all cases showing hyperthyroidism were given Lugol's preoperatively from one to two weeks before admis-

sion to the hospital. All of the exophthalmic and the toxic adenomatous cases reported palpitation before operation and only three complain of it now. Nervousness, a hard symptom to evaluate, followed closely the degree of toxicity, with three cases in which it continued to the same degree, six slightly, and five not at all (the remainder not reported). The average highest B. M. R. before operation on seventeen cases was plus 40. While on ten cases checked up recently the average was plus 4.7, which includes two of the three cases which were out-and-out recurrences and there was one death, making a mortality of slightly over 4 per cent. Nine cases reported complete rehabilitation; one, partial, due to cardiac damage before the goiter was removed; and the three recurrences have not been able to resume their duties. The average stay in the hospital was eleven days.

In the literature too little work has been done on the end-results of thyroidectomies, and the same can be said of those cases managed by the internist and the radiologist. Coller and Potter, at the University of Michigan, in 1931 made an effort to check twelve hundred thyroidectomies performed at the University Hospital between August 1, 1925, and December 31, 1929. A satisfactory check was made upon only seven hundred thirty-three of the twelve hundred cases. A period of five years to eighteen months had elapsed when the report was made. Subtotal thyroidectomy was performed in each case, and in thirty-four of the series, subtotal lobectomy, or the fractional operation, was done.

In their first table, exophthalmic goiter is shown to be about twice as common in the female. Although most series show an even higher ratio. The average age is 37.6 years, or approximately ten years earlier than the average age for the toxic adenomas and about five years later than the average age for the nontoxic adenomatous group. The average duration of symptoms in the exophthalmic is fourteen months, as compared to forty-three months for the toxic adenomas, and, of course, the adenomas have usually been in evidence for 10 to 15 years, while the enlargement in the exophthalmic type, if noticed at all, usually follows the symptoms in a month or so.

	Number	Male	Female	Ave. Age	Ave. Durat. Sympt.	Ave. Durat. Goiter	Compl. Rehabilation	Unrelieved	Worse	Iodine Resist.
Exoph. Goiter	267	37%	63%	37.6	14 8 mo.	9 mo.	91.4%	8.3%	0.3%	15%
Toxic Adenoma	273	16%	84%	45.9	43.7 mo.	15.6 yr.	95.6%	4.4%	0	6%
Non-Toxic Adenoma	184	18%	82%	33.0	41.5 mo.	16 yr.	94.5%	3.8%	1.7%	

Table 1—Data on three groups studied

Complete rehabilitation, in this series, does not mean that all symptoms were relieved, but that the patient is at least able to resume necessary duties for a livelihood or is able to make readjustment to society in a satisfactory manner. In the exophthalmic group, 91.4 per cent, and in the toxic adenomas, 95.6 per cent were completely rehabilitated. In the former, 8.3 per cent unrelieved, and .3 of 1 per cent made worse. While in the toxic group, 4.4 per cent unrelieved and none made worse. The average gain in weight, taken from the time of admission to the time of the check-up, was

EXOPHTHALMIC GOITER

267 Cases

Complete Rehabilitation	Unrelieved	Worse	No Residual Symptoms
244	22	1	129

129 (48.3%) had no residual symptoms.
115 (43.0%) had residual symptoms as follows:
[25 (9.3%) Exophthalmos alone
[21 (7.8%) Exophthalmos and Cardiac Symptoms
[50 (19.0%) Subjective Cardiac Sympt. [Tachycardia] [Arrythmia] [Palpitation] 26.8%
19 (7.1%) Voice difficulty (Not laryngeal paralysis)
5 (1.9%) Recurrence compl. relief with 2nd operation
8 (2.9%) Recurrence Unrelieved
13 (4.8%) Total recurrence

Table 2. Data on Group of Patients with Exophthalmic Goiter.

POTTER and COLLER.

twenty-seven pounds. The average postoperative pulse was 74.

In this next table is a further analysis of this same group. Here there were two hundred forty-four of the two hundred sixty-seven cases rehabilitated, or 91.4 per cent. Of these rehabilitated cases, 48.3 per cent had no residual symptoms; 43 per cent had residual symptoms as follows: 9.3 per cent exophthalmos alone; 26.8 per cent had exophthalmos and cardiac symptoms combined; 19 per cent had cardiac symptoms alone, such as tachycardia, arrythmia, and palpitation; 7.1 per cent still complained of some voice difficulty, such as "weakness," "unable to sing as well," and so forth, but not due to laryngeal paralysis. And there was a total of thirteen, or 4.8 per cent, of recurrences, five of which were relieved by second operation and eight were not.

Of the unrelieved group, more than half had had a return to normal metabolism by the operation, but were unrelieved by heart damage or other associated lesions not related to the operation per se. Two cases were classed in the myxedema group because of complaints of chilliness, mental dullness, and they felt better when taking thyroid, although their metabolic rates were only minus 15 and minus 14. The one patient made worse was a permanent tetany. Two other cases of transient tetany, which cleared up in two weeks, were encountered.

EXOPHTHALMIC GOITER	
All Cases	14.8 Months
No Residual Symptoms	9.0 Months
With Residual Symptoms	14.0 Months
Unrelieved	16 5 Months
TOXIC ADENOMAS	
All Cases	43.7 Months
No Residual Symptoms	32.3 Months
With Residual Symptoms	32.7 Months
Unrelieved	57 Months

Table 3—Relation of Results to Duration of Disease
POTTER and COLLER

As to the recurrent cases, which may seem high in this group, thirteen or 4.8 per cent. I believe this can be explained by their leaving more thyroid tissue than some of the other leading goiter surgeons, for example, Richter of Chicago, who plans to leave only about two grams, one gram on either side of the trachea. Richter states, "That the usual cause for relapse or failure of the first operation is insufficient thyroid tissue removed." He reports a series of 1,090 thyroidectomies in which 96 per cent became normal (normal B.M.R.) after one operation. Of the thirty-nine who failed to become normal, twenty-three consented to the second operation, and, of these, twenty-one returned to a normal B.M.R. or below, making an ultimate 98.4 per cent cures. Richter's mortality was 0.89 per cent. It is estimated that the average mortality from surgery for goiter in the larger clinics is 1 per cent and for the average surgeon doing a reasonable number of cases, 2 per cent. Coller and Potter claim, "Recurrences in small percentages is a far better complication than tetany or myxedema, one easier to treat and one that carries a lower morbidity."

From the above table it will be seen that the best results from surgery in the treatment of exophthalmic goiter depend in part upon a shorter duration of the disease. To quote their conclusions: "From our observations on the entire group of patients with exophthalmic goiter, we are struck by the fact that the speed of the return to normal and the completeness of this restoration is importantly influenced by the duration of the disease and the ability of the patient to have freedom from social cares for some time after operation."

In the past, I believe too much attention has been paid to the technic of operation alone, and too little to other phases of the patient, as a sufferer of hyperthyroidism.

What we think we know about goiter fills volumes, but what we really know would make an acceptable monograph. We speak of the thyroid as a gland of internal secretion, secreting a substance called thyroxin, the true chemical nature of which is not known. We know that this secretion has its effect upon the sympathetic nervous system as well as the other endocrines, particularly the adrenals and the sex organs. We know that an over-production of thyroxin is accompanied by microscopic changes in the epithelium of the gland which we call hyperplasia and hypertrophy.

There are other suggestions that the secretion of the thyroid gland in hyperthyroidism is not only quantitative but qualitative as well. Have we any proof that surgical removal of part of the diseased gland changes the character of the secretion of the portion left in the neck? Or have we any proof that x-ray changes the character of the secretion? It

would seem that all our treatment is directed at the quantitative changes.

We know that removal of too much of the gland, surgically, produces the syndrome of myxedema, so it has always been a mystery to me how any surgeon is expected to know just how much or how little of the gland to remove. It will also be a puzzle how the radiologist will know just how much of the hyperplasia to destroy. I would even go so far as to question if a patient is cured when and if his B.M.R. is reduced to so-called normal limits, which we usually say is between plus 15 and a minus 10. Many such patients can never take the place in society that they once held. For years surgery has been the best form of treatment known for those unfortunates afflicted with goiter, and more recently x-ray has been making rapid strides, but it is my belief that real cure for goiter lies in preventive measures, which can be accomplished only when we know more about the basic factors of etiology. Until such time arrives, of course, we must rely upon the best methods that we have at hand.

The best methods are not medical alone, not surgical alone, and not radiological alone, but a combination of the three that is best suited to the individual case. The surgeon having performed thousands of thyroidectomies is too prone to minimize his failures. He sees the patient in an extreme degree of thyrotoxicosis. He advises rest and Lugol's for a couple of weeks and then removes that portion of the gland substance that he thinks necessary, with no accurate knowledge of just how much to leave. The patient is in bed another ten days and from all appearances he is greatly improved. Maybe he returns in a month for metabolic test and it is found to be within the so-called normal limits. Then one of three things happens: (1) the patient is restored to health; (2) the patient still complains of certain symptoms associated with the disease which he will probably carry to his grave; or (3) he goes to some other source for help and is never heard of again. What has been said of the surgeon, doubtless can be said of the radiologist, who thinks that radiology is the cure-all for hyperthyroidism.

There are those radiologists who claim 10 per cent of the patients coming to them have had previous operation, and condemn surgery on this score; and there are those surgeons who do not believe that hyperthyroidism is cured as long as the thyroid gland remains in the body. It seems to me that both avenues of treatment have their advantages and their disadvantages and the only way to give the patient the most that medical science can offer—which is none too good at the best—is for a closer cooperation between the internist, the radiologist and the surgeon.

The treatment of goiter usually begins with the family physician and should end with him. It is he who is best acquainted with the patient's home environment, the adjustment of which, to relieve the every-day stress and strain, goes a long way in the ultimate outcome of treatment. He should be acquainted with the dangers of the injudicious use of iodine. Coller says that iodine administration after the age of thirty is dangerous in adenomatous and exophthalmic goiter unless for preoperative preparation. The patient is next seen by the internist, who should check the patient from the standpoint of the heart and the sympathetic nervous system, and should determine, in consultation with the surgeon and the radiologist, just which type of treatment is indicated. In order for them to do this, each will have to value the patient's outcome more than his own mercenary desires. Frequent check-ups by either the surgeon or the radiologist, for a period of one year after treatment is completed, is one thing that is too often forgotten. Then the patient should identify himself with the family physician again until all doubts of cure are past. It is the family physician more than all others who can help this patient again to assume his rightful place in society.

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TABLE A.

No	Sex	Age	Type Clin.	Type Path	Wt. B	Wt. A	Exop.	Enlarg. Neck	Recur.	Pulse B	Pulse A	Palp. B	Palp. A	Nerv. B	Nerv. A	BMR B	BMR A	Rehab.	L or D	Days Hosp.	Results
1	F	51	Exop.		80	133	No		No	80	70	yes	yes				— 5%		L 7 yrs	9	Good
2	F		Exop (Ext.)	(Toxic					No	120	80	yes	yes	Ext		+82%		yes	L	10	Good
3	F		(Adenoma	(Non-Tox.	Yes?	130	No	Li	No	90	90	yes	No	Ext	No	+52%		yes	L 5¾ yrs	6	Good
4	F	42	(Adenoma				No	Ri	No	90	84			Slt					L 4¾ yrs	13	Good
5	F	44	Exop.		92	92	Mkd	Ri Li	No	96	84	yes	yes	Mkd	Slt	(+59% (+37%	0%	yes	L 4¾ yrs	8	Good
6	F	42	(Adenoma	(Non-Tox.	125	130	No	Ri	No	80	75	yes	yes	Slt	Slt		(—13% (— 5% (—10%	yes	L 4½ yrs	7	Good
7	F	45	(Adenoma	(Non-Tox.	114	132	No	Rii Lii	No	95	70	No	No	Mkd	No	+12%		yes		12	Good
8	F	22	(Adenoma	(Non-Tox.	107	105	No	Li	No	120	75	yes	No	Ext	No	+31%	— 2%	yes	L 3½ yrs	8	Good
9	F	44	Exop.		(140 (114		Mod	Ri Lii (119)	No	120	76			Mod		(+43% (+21%			L 4½ yrs (D 66	14	Good
10	M	41	Exop.				Mkd	iii (gm)	D	92	D		D	Mkd	D			D.	(Hours	3	Death
11	M	42	Exop.				Mod	Ri Li	No	98	74			Mkd		(+80% (+25%			L 4 yrs	13	Good
12	F	54	Exop.		(150 (90		Mkd	0 0	No	98	72			Mod		(+10% (+15%	— 6%		D 3¾ yrs	10	Good
13	F	23	Exop.				Mkd	Li	Yes	124	95	yes		Mkd					L 2 yrs	10	Recurrence
14	F	45	Exop.		107	131	Mod	Ri	No	96	80	yes	yes	Mod	yes	(+49% (+39% (+ 6%	+ 6% +56%		L 3¾ yrs	14	Good
15	F	45	Exop.				Mod	Lii Ri	No	96	86	yes	occ	Mkd	Slt	(+56% (+45%		Part	L 3 yrs	9	Good
16	F	43	Exop.				Slt	Ri Li	No	104	80	yes	No	Slt	Slt	(+31% (+45%		yes	L 1¼ yrs	14	Good
17	F	46	Exop.		103	122	Mkd	Ri Li	No	100	64	yes	occ	Mkd	No	(+35% (+35%	— 7% + 5%		L 1 yrs	12	Good
18	F	22	Exop.		123	104½	Mkd	Ri Li	Yes	106	82	yes	yes	Mkd After x-ray	yes	(+15%	+20 0 + 3%	No	L 1 yrs	11	Recurrence
19	F	48	(Tox.	(Adenoma	96	112½	Mod	Walnut sized Adenoma	No	88	78	yes	occ	Mkd	Slt	+53%	—34% —12%	Smae	L 8 Mos	6	Fair
20	F	56	(Tox.	(Adenoma			No	Walnut sized Adenoma	No	100	82	yes	Slt	Slt	No	+35%			D	21	Good
21	M	43	(Tox.	(Adenoma	120	144	Mod	Walnut sized Do Rt		120	65	yes	occ	Mod	Slt	+15%		yes	L 5 Mos	17	Good
22	F	55	(Tox.	(Adenoma				L. only	No	144	78	yes	No						L 5½ yrs	10	Good
23	M	20	Exop.		120	110	Mod	Li	Yes	120	60	yes	yes	yes	yes	(+22% (+ 7%	1% + 7% +18% +32		L 6 Mos		Recurrence

TREATMENT OF ACUTE INTESTINAL OBSTRUCTION

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Acute intestinal obstruction is one of the most important acute abdominal conditions the surgeon is called upon to treat. The mortality is high, the rate having remained stationary, or possibly slightly reduced, during the last two decades. Literature upon the subject is voluminous. However, very little has been presented of value towards reducing the mortality rate, aside from the work of Holden, Hayden and Orr. Hayden and Orr[1] demonstrated a decrease in chlorides in toxic ileus in dogs and, furthermore, that the administration of saline intravenously to these cases not only replenished chlorides but had definite effects upon peristalsis and prolonged life many days. Holden,[2] by his method of treatment of ileus, has proved his method superior to others by the best of all criteria, a reduced death rate. We quote Holden, as follows:

"An ample midline incision, extending from the pubes to above the navel, should be made. Evisceration of the obstructed bowel is quite necessary. This may appear to be a vicious procedure. It is contrary to our previous conception of good abdominal surgery. We have instinctively avoided removing the intestines from the abdominal cavity. We have been fearful of shock. Our anesthetist is frequently asked to note if there is any change in the quality or rate of the pulse while the intestines are eviscerated, as we do it. Rarely does she report any change of any importance whatsoever. The intestines, as soon as they are removed from the abdomen, are kept warm by large, hot, salt napkins (water 110° F.). These salt napkins are constantly replaced as they become cool. Traction on the mesentery is avoided, since it is painful and will cause some shock. With the bowels eviscerated, it is very easy to locate the site and cause of the obstruction. Before operation we make no effort to determine the location or nature of the obstructing cause. It is immaterial to speculate on where the obstruction is or what is causing it."

The technic of our procedure is simple. Like Holden, we first eviscerate.[3] An enterostomy tube is then inserted into the intestine two inches proximal to the obstruction. The metal shoulder is then clamped tight and the viscus involved is emptied by stripping through the fingers by having an assistant pull on it steadily and firmly. The two-foot hose is then elevated, a funnel placed in the distal end and salt solution used to wash out the bowel. The obstruction is then dealt with and the bowels are returned to the abdomen. The closure of the wound is then partially completed and 500 to 1000 cc. of salt solution left in the bowel. The enterostomy tube is removed and closure completed. Removal of damaged intestine is indicated in all cases where there is any doubt or question of immediate return of circulation. We do not believe that any surgeon should chance the life of a patient when there is a question of return to normal of circulation or extensive infiltration into the gut wall of extravasated blood. Resection of several feet of bowel is easy, safe, and life-saving.

We differ from most surgeons in the matter of anesthetics. We are thoroughly convinced that local anesthesia has materially reduced our death rate. We have utilized it in the treatment of ileus in our cases. The results have been somewhat better. From a study of our series of cases we have made some interesting deductions.

Our animal experimental work has been extensive, but we are not ready to include it in this paper. There is a woeful lack of experimental work on obstruction, in the literature, and we feel that there are many problems in intestinal obstruction which may be clarified by dog work.

In the twenty-four cases which we analyze, we attempt to compare the results of treatment by our method with that of other methods of treatment in use today. The time element has always been the one common ground upon which all surgeons could agree. Early cases live, late cases die. This point seems to be the last progressive step. There we are united and there we stand. Holden's statistics and ours seem to indicate that this time factor can be extended.

We wish to add that, in our treatment, in addition to the administration of chlorides to our

patients before and after operation, we wash out the bowel with a hypertonic salt solution at time of operation and leave within the lumen of the gut some of this solution. We also give dry salt, two drams by mouth, while the operation is being completed. We also continue fluids by mouth immediately after. Intravenous medication is used, but emphasis is placed on fluids by mouth. Resection of bowel does not contra-indicate fluids or soft food.

All cases presented in this paper are complete obstructions, manifesting extreme symptoms of toxicity. Eighteen were treated by our method and six by other methods.

MODIFIED HOLDEN METHOD

CASE 1. Miss V. W. Duration of symptoms was 9 hours. Intussusception of ileum into the cecum caused obstruction. Resection of 30 inches of ileum was done. Abdomen was drained, local anesthesia used. Recovery uneventful.

CASE 2. Mrs. A. A. Duration of symptoms was 48 hours. We resected 18 inches of ileum. The abdomen was drained. Local anesthesia was used. Recovery was uneventful.

CASE 3. Mrs. C. K. Duration of symptoms was 120 hours. Pelvic adhesions involved distal ileum. No drains were used. Local anesthesia was used. Patient expired 72 hours later. We feel sure this patient died of general peritonitis.

CASE 4 Mrs. R. B. Duration of symptoms was 96 hours. Adhesions near cecum involved the distal ileum, 12 inches of which was resected. Abdomen was drained. Local anesthesia was used. A fecal fistula developed which closed in 21 days. Patient recovered.

CASE 5. Mrs. M. C. Duration of symptoms was 96 hours. The distal ileum in an incarcerated inguinal hernia. Local anesthesia was used. The abdomen was drained. There was an uneventful recovery.

CASE 6. Mrs. E. L. Duration of symptoms was 96 hours. Cause of obstruction was adhesions involving the distal ileum. Drains were placed in the abdominal cavity. Patient was given general anesthesia and expired six hours later. This patient was told to get into hospital four days before she did so. She refused, stating that she desired death.

CASE 7. Mrs. L. P. Duration of symptoms was 192 hours. Adhesions near cecum obstructed the distal ileum. Anastomosis of the bowel was done. The abdomen was drained. Local anesthesia was used. An uneventful recovery followed.

CASE 8. Mrs. E. B. Duration of symptoms was 24 hours. Adhesions obstructed the small bowel at the junction of the jejunum and ileum. The abdomen was drained. General anesthesia was used. Patient recovered.

CASE 9. Mrs. E. N. Duration of symptoms was 144 hours. Adhesions obstructed the distal ileum. The abdomen was drained. Local anesthesia was used, and the patient made an uneventful recovery.

CASE 10. Mr. C. B. Duration of symptoms was 48 hours. Dynamic ileus was found; no drains were used. Local anesthesia was used. Recovery was uneventful.

CASE 11. Mrs. J. B. Duration of symptoms was 48 hours. Obstruction of the distal ileum was caused by adhesions. The abdomen was not drained. Local anesthesia was used. Recovery was uneventful.

CASE 12. Mrs. A. L. D. Duration of symptoms was 72 hours. There were adhesions involving the ileum near the cecum. The abdomen was not drained. Local anesthesia was used. Patient made an uneventful recovery.

CASE 13. Mrs. V. W. Duration of symptoms was 144 hours. Adhesions obstructed the ileum near the cecum. No drains were used. The patient made an uneventful recovery.

CASE 14. Miss M. S. Duration of symptoms was 24 hours. Adhesions involved the distal ileum. Abdomen was drained; also, enterostomy tube was left in the ileum. Local anesthesia was used. Recovery was uneventful.

CASE 15. Mr. P. B. R. Acute obstruction. Duration 72 hours. Valvulus, distal ileum, adhesions. Abdomen drained. Recovery uneventful.

CASE 16. Mr. G. B. F. Acute obstruction, duration 48 hours. Adhesions, distal portion of ileum. Abdomen drained. Recovery uneventful.

CASE 17. Mr. G. B. F. 9 months later. Acute obstruction, 18 hours duration, midportion of small bowel; adhesions; resection of 18 inches of bowel; abdomen drained. Uneventful recovery.

CASE 18. Mrs. J. Acute obstruction, duration 48 hours; volvulus, ascending colon; cecostomy; ablation of adhesions. Recovery slow but complete.

OTHER METHODS

CASE 1. Mrs. V. B. Duration of symptoms was 48 hours. Obstruction was caused by incarcerated inguinal hernia which involved the distal ileum. Bowel was resected. The abdomen was drained. Local anesthesia was used. The patient developed an infected wound but recovered.

CASE 2. Master G. S. Duration of symptoms was 136 hours. The obstruction was due to intussusception of the ileum into the cecum. Bowel was resected. Drains were used. General anesthesia was given. Patient expired 16 hours later.

CASE 3. Mrs. L. V. Duration of symptoms was 24 hours. This was a case of postoperative adynamic ileus. General anesthesia was used. The patient expired on the table.

CASE 4. Mrs. H. Duration of symptoms was 24 hours. This was a case of postoperative adynamic ileus. Four enterostomy tubes were inserted at different times and made fast in the small bowel. Spinal anesthesia was given for relief. Hypertonic salt solution was administered intravenously. Patient expired on the second day.

CASE 5. Mrs. C. N. Duration of symptoms was 96 hours. It was a strangulated umbilical hernia involving the distal portion of the small bowel. No

drains were used. Local anesthesia was given. Patient made an uneventful recovery.

CASE 6. Mrs. F. G. Duration of symptoms was 18 hours. Obstruction was due to adhesions involving the distal ileum. The abdomen was drained. General anesthesia was used. Patient expired 48 hours later.

There were twenty-four cases: eighteen treated by the modified Holden method and six by other methods. Of the total number, there were six deaths, or 25 per cent. Of the eighteen cases treated by the newer method, there were only two deaths, or approximately 11 per cent. Of the six cases treated by other methods, there were four deaths, or a death rate of 66 2 3 per cent. Why the difference? Was the difference due to the methods? Was the time element a factor, of which we read in every article published? In consideration of the latter factor, we learn in a study of these cases that the average duration of symptoms of those treated by our method was 79-plus hours, while the duration of symptoms of those treated by other methods was only 57 hours. As has been previously stated, these cases were all cases of complete obstruction, most of them vomiting fecal material. It was necessary to do seven resections of the bowel and one anastomosis. Of the seven resections, five recovered and two died. One of these deaths was operated by our method and one by the classical method. Of the twenty-four cases, seventeen had drains in the abdominal cavity. Of those drained, four died. Of the six undrained, two died. Thirteen cases treated by our method were drained, and of these one died; the other death following this method of treatment was not drained and probably should have been. Of the six treated by the other method, four were drained and all died.

Of the total number of cases treated, there were three deaths under local anesthesia and three deaths under general anesthesia, or 18.7 per cent under local and 75 per cent under general. Local anesthesia was used in seventeen cases, general was used in five cases. Local anesthesia was used in fifteen of the cases treated by our method, two were given general anesthesia. One given local anesthesia died and one given general anesthesia died. We note here a mortality of 50 per cent under general anesthesia and of 7 per cent under local anesthesia in those cases treated by our method.

It seems that failure to make an early diagnosis and to operate immediately is undoubtedly a factor in the unreasonably high death rate. Early diagnosis, however, is not as important as proper pre-operative and post-operative treatment. We feel that, unless the patient is moribund with evidence of dissolution well advanced, the time element is of minor importance. Anesthesia seems to play an important role. This fact is universally admitted. Surgeons who never use local anesthesia for any other abdominal work will attempt it in intestinal obstruction. This is unfortunate. Local anesthesia is the choice in intestinal obstruction but the casual operator usually finds it inadequate and finishes with general. Spinal anesthesia or gas and ether should be the choice of surgeons not thoroughly familiar with the use of local anesthesia and its special technic.

This operation, like all other abdominal operations, should be done with as little damage to the mesentery and autonomic nervous system as possible. Dragging, tearing, and lacerating the mesentery should be avoided as much as possible.

CONCLUSIONS

1. The mortality rate in advanced and desperate cases of obstruction can be reduced.

2. The Holden method is a distinct improvement in treatment of ileus and tends to lower the death rate.

3. We believe our methods add to those in use by definitely lowering the death rate.

4. Anesthesia is of some importance.

5. The time element, heretofore considered of preeminent importance, in the light of our report seems to take a secondary position to treatment until after the 72-hour period. No relaxation should be indulged in by surgeons in the campaign for early diagnosis and early treatment of intestinal obstruction.

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PULSION DIVERTICULUM OF THE ESOPHAGUS

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(Read before the Medical and Surgical Association of the Southwest, held in Phoenix, Ariz., in December, 1930.)

Pulsion diverticulum of the esophagus, while not a common condition, occurs frequently enough that the condition should be kept in mind in making a diagnosis of patients who complain of dysphagia and regurgitation of food.

This report is based on a study of eleven cases, ten of which were operated upon. The youngest patient was forty-nine and the oldest seventy-six; the average age was sixty-six.

The two varieties met with are the traction and the pulsion diverticulum. The traction diverticulum occurs in any portion of the esophagus, usually in the thoracic portion. It is frequently multiple and rarely gives any symptoms. It is often found at postmortem or discovered during a routine roentgenological examination of the gastro-intestinal tract. It rarely gives any symptoms and the treatment is not surgical.

The pulsion diverticulum practically always occurs in the same locality, that is, on the posterior wall of the esophagus, just back of the cricoid cartilage. At this point, where the oblique muscles of the pharynx and the transverse circular muscles of the esophagus meet, there is a weak point normally. In people who develop diverticulum it has been suggested that there was at this point more than the normal weakness, probably on absence of considerable muscle fibers.

Jackson[1] believes that the condition is the result of a spasm of the cricopharyngeus muscle which fails to relax during the act of swallowing. This produces a tremendous pressure in the pharynx, causing the mucous membrane to protrude through this weakened area of muscle.

Pulsion diverticulum of the esophagus is frequently associated with other conditions such as stricture, benign or malignant, cardiospasm, and goiter. These conditions, I personally believe, are purely incidental, and in no way can they be the cause of a pulsion diverticulum. But whether the condition is congenital or due to spasm of the muscle, once the mucous membrane has herniated through the esophageal wall, the sac gradually enlarges. At first it is situated immediately back of the esophagus and as it gets larger it grows down into the neck, usually on the left side. In this series four sacs presented on the right side of the neck and six on the left side of the neck. The walls of the sac are usually very thin, composed of only mucous membrane and connective tissue. Judd[2] has called attention to the fact that occasionally there may be a band of muscle fibers extending across the sac, but muscle tissue is not part of the sac wall. Also very frequently just over the neck of the sac is a plexus of veins.

The symptoms are very typical. Dysphagia is usually the first symptom complained of. Regurgitation of food is usually the second symptom. This varies according to the size of the sac. With small sacs people have very little difficulty in swallowing and very little regurgitation, but, in people with large sacs, the regurgitation is very troublesome and occurs after taking any food or liquids. As the sac gets larger, gurgling noises can be heard in the throat and there usually is a troublesome cough. The cough is usually due to an irritation of the recurrent laryngeal nerve. When the sac gets very large, there is generally so much difficulty in swallowing that the patient gets very little nourishment. Consequently there is considerable loss of weight.

The diagnosis is not difficult and no complicated tests are necessary. Given a patient with a history of dysphagia and regurgitation of food, the first thing to order is a barium-meal examination. The x-ray will always reveal the sac, if the condition is due to pulsion diverticulum. The x-ray picture reveals a globular shadow in the neck, and, observing the patient under the fluoroscope, the sac can be seen emptying from the top, in contradistinction from dilatation due to strictures, benign or malignant in which the sac always empties from the bottom. The x-ray will also reveal in which side of the neck the sac is located. Frequently, in patients with large sacs, that side of the neck in which the sac is situated can be seen enlarging when the patient is allowed to

drink. A slight pressure over this area will also cause regurgitation. This is present only in patients with very large sacs. Occasionally an esophagoscopic examination is necessary. This is very difficult to do and in most cases is not necessary, because the x-ray will usually show whether any other pathology is present or not.

Fig. I. Showing diverticulum sac delivered from the mediastinal cavity.

These patients come to surgery at present in much better condition than formerly, so that gastrostomy is practically never done. Occasionally one has to do some type of forced feeding. In the last case done of this series, the patient's condition was extremely grave. She had had symptoms for twenty years and had lost eighty pounds in weight. A gastrostomy would ordinarily have been done, but, following the suggestion of Lahey,[3] the sac was delivered from the mediastinal cavity (Fig. I). In a few days the greater portion of the sac was removed, leaving about an inch of the neck of the sac protruding beyond the skin. Through this a catheter was inserted down the esophagus into the stomach and the patient was fed in this way. No difficulty was encountered doing this. I personally believe that it is far superior to doing a gastrostomy, as there is very little shock if the operation is done under local anesthetic. Figure II shows the catheter down into the esophagus. The catheter in the upper part of the picture is in the mediastinal cavity where the sac has been removed.

The treatment of pulsion diverticulum is entirely surgical. The two-stage operation, I believe, offers the greatest amount of safety to the patient. The first stage of the operation consists of removing the sac from its usual position and anchoring it into the neck so that the mouth of the sac is lower than the base. In this way the patients are able to swallow immediately, and usually they are able to take sufficient nourishment. Also, which is a very important point, by allowing about ten days to elapse between the first and second stages, the wound in the neck, especially if down into the mediastinum, has a chance to be sealed off by granulations. Later, when the sac is amputated, if there should be a slight leak, there

Fig. II. Roentgenogram showing catheter introduced through the neck of sac into the esophagus and into stomach. The upper catheter is in the mediastinal space from which the sac was removed.

is no danger of mediastinal infection, which has been the cause of the high mortality of former years.

The technic of the operation is as follows: An incision is made along the anterior bor-

der of the sternocleidomastoid muscle from above the level of the cricoid cartilage down to the clavicle. The sternomastoid muscle is retracted outward. The deep cervical fascia is divided parallel with the skin incision. The large vessels of the neck are retracted outward and the sternohyoid muscle is retracted inward. The middle thyroid vein if present is ligated before any attempt is made to expose the thyroid gland. The omohyoid muscle should be divided if it interferes with good exposure. Also, if the thyroid gland cannot be rotated far enough inward to give a good exposure, the inferior thyroid artery can be cut, great care being taken to ligate the artery far enough away from the gland not to injure the laryngeal recurrent nerve.

After the thyroid gland has been rotated inward, the trachea is exposed, and the landmark is the cricoid cartilage. Behind the trachea, the esophagus can be seen as a flat fold pressed against the vertebrae. If the sac is small, it will be behind the esophagus slightly to the left of midline just below the level of the cricoid cartilage. If the sac is large, it is very easily recognized. If local anesthesia is used—and this is the best type of anesthesia—the patient is asked to swallow. The sac can be seen bulging in the lower portion of the neck. The sac when located can usually be freed from the surrounding structures by blunt dissection. Some few firm adhesions may have to be cut. Great care should be taken not to perforate the sac. As soon as the sac is delivered from its position in the neck or chest, the cavity should be packed with warm sponges to protect the mediastinum from accidental leakage. One point of importance in the dissection is the danger of injuring the sac at its juncture with the esophagus. The sac, having been entirely freed, should be sewed to the sternocleidomastoid muscle so that the base of the sac is higher than the neck, in this way preventing food from entering the sac. At the end of a week or ten days, the sac can be removed.

The second stage of the operation consists in freeing the neck of the sac down to the esophagus. The sac is then transfixed the same as a hernal sac, with a No. 0 chromicized catgut. The sac is ligated and cut off. Usually three interrupted sutures of No. 0 chromic are placed in the walls of the esophagus, inverting the stump of the sac inward. In the majority of cases there is no leakage of food and the patient can be permitted to swallow within twenty-four to forty-eight hours. In a few cases we have had slight drainage which has persisted from a few days to three weeks, but all the sinuses closed, and there has been no difficulty from them afterwards.

CONCLUSIONS

1. Probably the etiological factor in the production of pulsion diverticulum is a combination of weakness of the muscles plus a spasm of the cricopharyngeus muscle.
2. All patients complaining of dysphagia and regurgitation of food should have a barium-meal examination.
3. Gastrostomy is rarely indicated, as forced feeding can usually be carried out by some other methods.
4. The two-stage operation is the safer procedure.
5. Local anesthesia is the ideal anesthetic.
6. In this series of ten operated cases, seven males and two females, the average age was sixty-six.

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SURGERY OF THE BILIARY TRACT

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(Read before the Forty-third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7 to 9, 1934.)

The surgical management of lesions of the biliary tract often presents problems of unusual interest. Perhaps in no other field of abdominal surgery is there greater need for sound surgical judgment and technical skill. The toll exacted by the application of ill-advised procedures and by injury to important structures through technical inexperience or lack of care, is sufficiently great to warrant more than casual consideration. That serious injury to important structures, at operation, particularly to the common bile duct, is noted relatively so rarely, is a tribute to the skill of the large number of surgeons who are inter-

ested in these problems. Care should be exercised, however, to avoid a false sense of security. The distressing circumstances attending traumatic stricture of the common bile duct are sufficiently impressive to justify emphasis of the need for meticulous care.

Since surgery of the biliary tract depends to a large extent on physiologic principles, it does not seem out of place to review briefly the normal function of the liver and gallbladder.

PHYSIOLOGY OF THE LIVER

The liver is the largest organ in the body, and, from many standpoints, it is the most important. Its function is dependent chiefly on the properties of the hepatic cell, minute collections of which form an anatomic unit, the hepatic lobule. Contained within the lobule are connective-tissue reticulum, the smaller blood vessels, and biliary canaliculi. The bile formed by the hepatic cells is conveyed through intralobular biliary canaliculi to the interlobular biliary ducts, and thence through a gradually enlarging system of excretory ducts to the main hepatic ducts. Mann has ascribed an important function to the stellate or reticuloendothelial cells (von Kupffer's cells) of the capillaries of the liver; these cells have marked phagocytic properties and are similar to those found in the bone marrow and in the spleen. Each lobule of the liver is supplied with blood, coming in part from the general circulatory system through the hepatic artery and in part through the portal vein, which drains the alimentary canal. It is obvious from such an anatomic arrangement that one of the chief functions of the liver is assimilation of many of the soluble materials absorbed from the alimentary canal. This process is not completely understood, but many interesting contributions have been made through the investigative work of Mann and his coworkers. Mann, Bollmman, and Magath, in a series of most interesting studies, have shown that dogs usually will die within five to ten hours after removal of the liver. Examination of the blood, urine, and tissues during this period revealed the following progressive changes: there was a decrease of sugar in the blood and of urea in the blood, urine, and tissues; there was an increase of bile pigment in the blood and urine, of uric acid in the blood and urine, and of amino-acids in the blood, urine, and tissues.

Hypoglycemia produced by removal of the liver was controlled by intravenous injection of glucose. With the use of sufficient quantities of glucose, the level of the blood sugar could be increased above normal. If the animal was then allowed to die from hypoglycemia, it was found that the amount of glycogen stored in the skeletal muscles actually had increased. In the hepatectomized animal, injection of epinephrine failed to make available this stored glucose and to produce hyperglycemia, as it does in the normal animal. From these interesting findings, Mann concluded that the liver apparently was the sole regulatory mechanism for blood sugar.

Although there is progressive diminution in urea following removal of the liver, there is definite accumulation of amino-acids in the blood, urine, and in the tissues, and the quantity of uric acid in the blood and urine of dogs gradually increases. It was found that, if the kidneys are removed at the same time, the level of the blood urea is not altered. Evidence seemed to indicate that the liver was essential for the deaminization of amino-acids, the synthesis of urea, and for the destruction of uric acid in protein and purine metabolism.

The chief components of bile, in addition to water and salts, are bile pigments, bile salts, cholesterol, and lecithin. In addition to these substances, a small quantity of neutral fats and soaps, and, occasionally, a trace of urea, are present. The bilirubinemia and bilirubinurea that followed hepatectomy in the dog were associated with progressive jaundice. Utilizing photospectroscopic methods, Mann and his associates were able to demonstrate that this pigment was identical with bilirubin, and that it was found principally in the bone marrow and, to a lesser extent, in the spleen. The liver, therefore, was thought to be simply an organ of excretion for this bile pigment. Howell stated that the bile acids (taurine and cholic acid) are formed directly in the hepatic cells. He has demonstrated that, if the bile duct is ligated in birds, bile is reabsorbed and bile acids may be detected in the urine and in the blood. If the liver is extirpated, however, no trace of the bile acids can be found in the blood or urine, thus indicating that these substances are not formed elsewhere. Cholesterol is the third component of bile, and it has been assumed that it is not formed in the liver but is

eliminated by hepatic cells from the blood, which collects it from various tissues in the body through which it is widely distributed. Some investigators have suggested that the source of cholesterol in the bile is the stroma of erythrocytes from which it is liberated; this process is thought to take place in the liver. Definite facts in regard to the metabolism of cholesterol and in regard to the site of formation of lecithin, are lacking. The most widely accepted theory relative to the latter is that it represents a waste product derived from the liver or from the body at large.

Bollman and Mann have shown that hepatectomized animals have a markedly reduced immunity to phenol, benzoic acid, and to many other drugs. By means of the heart-lung-liver preparation, Priestley has demonstrated that many times the lethal dose of strychnine is removed from the blood stream by the perfused specimen.

Little is known regarding the many factors concerned in the coagulation of the blood, but marked lowering of the level of fibrinogen in the blood plasma following injury to the liver of dogs, was demonstrated by Whipple and Hurwitz. The foregoing physiologic activities of the liver may be summarized as follows: (1) carbohydrate metabolism, the liver apparently being the sole regulatory mechanism for blood sugar; (2) protein metabolism, in which deaminization of amino-acids, synthesis of urea, and destruction of uric acid take place; (3) formation of bile, with excretion of bile pigment, cholesterol (?), lecithin (?), and water and salts, and the formation of bile acids; (4) detoxification, in which chloroform, metallic poisons, phenolbenzoic acid, strychnine and other drugs are rendered less harmful or harmless; and (5) blood coagulation, with formation of fibrinogen.

PHYSIOLOGY OF THE GALLBLADDER

In a recent study of 690 consecutive operations on the biliary tract, it was found that the gallbladder was involved by a pathologic process in 88.8 per cent of the cases. In spite of the frequency with which the gallbladder is of surgical interest, however, comparatively little is known regarding its function. Its physiologic importance as a biliary organ is relatively insignificant, as is evidenced by the fact that cholecystectomy has in the vast majority of cases been unattended by ill effects. This is due to a most interesting ability on the part of the body to compensate for loss of the gallbladder. Boyden (1925) has shown, in his investigative experiments with cats, that the gallbladder is always empty within a short period after giving a diet high in fat. Higgins and Mann (1926) concluded from their studies on the emptying of the gallbladder of fishes, guinea pigs, and dogs, that the gallbladder empties through the cystic duct by contraction of its own musculature, and that the sphincter of Oddi is not a factor in the emptying mechanism except that its relaxation permits the bile to pass to the duodenum under pressure incited by the contraction of the gallbladder. Perhaps the most important function of the gallbladder is the concentration of bile. Hohlweg demonstrated that the gallbladder could concentrate bile in the intervals between digestion by absorption of water, until 40 cc. of bile found in the gallbladder represented from 240 to 400 cc. of bile from the liver.

That absorption of other materials besides water occurs within the gallbladder, is not questioned, but the extent of this absorption is not known.

Puestow has demonstrated that, in the fasting animal with an intact, normal gallbladder, the orifice of the choledochus usually was closed. Food stimulated the flow of brown, viscid bile. After cholecystectomy, bile continued to flow in the fasting as well as in the non-fasting state, as the orifice of the choledochus was constantly patent. The intraductal pressure of the fasting animal was from 10 to 20 mm. of bile, as compared to from 140 to 170 mm. of bile when the gallbladder was intact. The foregoing physiologic activities of the gallbladder may be summarized as follows: (1) concentration and storage of bile; and (2) mobilization of concentrated bile in the duodenum, emptying occurring through the cystic duct by contracture of its own musculature.

PATHOLOGIC PHYSIOLOGY

From the surgical standpoint, the most important pathologic lesions producing changes of function in the biliary tract are those which mechanically obstruct the common bile duct and produce jaundice. Choledocholithiasis, benign stricture, and pressure on the duct by ex-

trahepatic agencies (usually carcinoma of the head of the pancreas) are three conditions which are of extreme surgical importance. Obstructive lesions of the common bile duct produce serious changes in the liver which depend, to a great extent, on the presence or absence of sepsis. In addition, widespread physiologic changes occur, among which are anemia, disturbances of blood coagulation with an increase in bleeding time, renal insufficiency, and incomplete digestion and absorption of fats.

PATHOLOGIC ANATOMY

When the ducts of any secreting gland are obstructed, stasis, dilatation of the ducts, and parenchymatous changes follow, which are due to circulatory disturbances and infection. The term "hydrohepatosis" has been applied to this condition when obstructive processes of the bile ducts occur. McMaster, Brown, and Rous have classified hydrohepatosis as (1) concealed and (2) manifest. They have found that the contents of the duct above the obstruction will approximate the normal more closely if the gallbladder is functioning. This condition constitutes the concealed type. If the gallbladder has been removed previously, or if it is functionless, the ducts will contain "white bile" due to resorption of pigment and secretion of mucus from their walls. This constitutes manifest hydrohepatosis. Counseller and McIndoe have noted a remarkable difference in the various grades and types of hydrohepatosis. By means of a celloidin injection and corrosion method, these investigators found that, of the conditions producing severe hydrohepatosis, the most important are stones in the common bile duct, stricture following operative intervention, and neoplastic obstruction. Not infrequently, a marked degree of hydrohepatossi will be observed when the gallbladder is functionless. Undoubtedly, the process resembles that which follows cholecystectomy, as Judd and Mann have demonstrated that the extrahepatic ducts dilate following removal of the gallbladder.

That absorption of bile pigment occurs in the gallbladder is indicated by the fact, in addition to various experimental data, that bile found in a gallbladder in which the cystic duct is blocked by an impacted stone almost invariably will be colorless, providing infection is absent. The viscus usually is quite tense, due to the secretion of mucus. As distention proceeds, the absorption of water lessens, and hydrops may proceed to such an extent that it is difficult to distinguish the tumor from one that has its origin in the pelvis. Empyema of the gallbladder is the result of infection of the bile in such a gallbladder by pyogenic organisms. Almost invariably, hydrops or empyema accompanies occlusion of the cystic duct.

RELATIVE INCIDENCE OF SURGICAL LESIONS OF THE BILIARY TRACT

In order to indicate the relative incidence of lesions of the biliary tract for which surgery was indicated, 690 consecutive operations have been analyzed (table 1).

TABLE 1

SIX HUNDRED NINETY CONSECUTIVE OPERATIONS ON THE BILIARY TRACT

	No.	Per cent
Benign Lesions		
1. Gallbladder		
Chronic cholecystitis with stones	376	54.5
Chronic cholecystitis without stones	84	12.1
Chronic cholecystitis with stone in common bile duct	67	9.5
Chronic cholecystitis with questionable stones in common bile duct	45	6.5
Acute cholecystitis with stones	18	2.6
Miscellaneous	9	1.3
	599	86.8
2. Extrahepatic biliary ducts		
Stricture, stones, fistulas and so forth	41	5.9
Extrinsic obstruction of common bile duct	14	2.0
	55	7.9
3. Liver		
Cirrhosis	10	1.4
Cysts	6	0.8
Abscesses	4	0.5
Cholangeitis with infection	1	0.1
Stricture of hepatic duct	1	0.1
	22	3.3
Malignant Lesions		
Carcinoma of gallbladder or ducts	14	2.0

SURGICAL PROCEDURES

Chronic cholecystitis. In more than half of the operations performed for lesions of the biliary tract in this series, pathologic examination revealed chronic cholecystitis with stones. The presence of stones in the gallbladder, as evidenced by clinical history or roentgenologic examination, usually is sufficient to warrant

surgical intervention for removal of the affected viscus. In many instances there is an associated inflammatory process in the liver, evidenced grossly by rounding of the edge of the liver, changes in color, and scarring of the external surface, particularly in the region adjacent to the gallbladder. Removal of the gallbladder has been found to be more satisfactory than drainage under such circumstances, for the focus of infection and the site of formation for further calculi has been removed.

It is obvious that, under certain circumstances, removal of the gallbladder is inadvisable. To do more than cholecystostomy with removal of the stones may subject the patient to a greater risk than is warranted. Associated pancreatitis, which is difficult to distinguish from a malignant condition, creates a situation in which cholecystectomy is inadvisable, for subsequent obstruction of the common bile duct may necessitate an anastomotic operation between the remnant of the gallbladder and the stomach or duodenum.

Choledochostomy. Choledochostomy should be instituted when calculi occur in the common bile duct, or after exploration of the duct when the presence of calculi is suspected. By what manner adequate, prolonged, biliary drainage is affected, is of little consequence, since many excellent methods have been proposed. In the ordinary case, a T-tube of appropriate size serves the purpose admirably. With this type of tube, reestablishment of the normal flow of bile into the duodenum may be encouraged by intermittent occlusion of the vertical portion of the "T."

The decision to explore the common bile duct may present a perplexing problem. In light of recent evidence that choledocholithiasis occurs in a much higher percentage of cases than formerly was believed, exploration should be done whenever a doubt exists. A history of jaundice and gross evidence of dilatation of the common bile duct with stones in the gallbladder usually are sufficient evidence to warrant a thorough search for calculi in the ducts.

Acute cholecystitis. When the gallbladder is acutely inflamed, the affected viscus should be removed whenever possible, providing the risk is not unreasonable. Calculi are almost invariably present in the viscus or in the cystic duct. The organ may be only moderately inflamed, or it may reveal all degrees of acute inflammation to a condition in which it is practically destroyed and represented only by remnants of necrotic material.

Stricture of common bile duct. In a series of sixty-four cases, discussed by Judd, in which operation was performed for stricture of the common duct, the condition was the result of obliterative cholangeitis in sixteen cases and, in fifteen others, the etiologic factor may have been cholangeitis. Judd noted that when this type of inflammatory occlusion occurred, obstruction usually was not complete, and when the duct was opened there was not the rush of bile or white fluid that is observed in the cases of traumatic stricture. Anastomosis of the stump of the common bile duct or the opening in the surface of the liver to an opening in the duodenum over a tube, was found to be the most satisfactory operation. Reconstruction of the common bile duct over a T-tube may be done in selected cases.

Biliary fistulas. Balfour and Ross reviewed 166 cases of biliary fistula at The Mayo Clinic and found that gallstones and their complications were primarily the cause of the condition in 85 per cent of cases. The gallbladder had been removed in only 10 per cent of these cases. Persistence of a biliary fistula is evidence of obstruction to the flow of bile through its normal channels. Incomplete, ill-advised, or faulty surgery usually is responsible for the condition.

Malignancy. Surgical treatment of carcinoma of the gallbladder or of the biliary ducts may be palliative or it may be radical. In a series of 212 cases of primary carcinoma of the gallbladder and of 100 cases in which the malignant process was primary in the bile ducts, recently reported by Judd and me, exploratory operation only was possible in 55.1 per cent of the cases. Cholecystectomy was performed in fifty-nine cases, cholecystostomy in forty-two, cholecystectomy and choledochostomy in nine, and an anastomotic operation in twenty-seven. Because of proximity to the liver, malignant lesions in this region present an unusually grave prognosis.

Preoperative care. Specific preoperative care in conditions requiring surgery of the biliary tract usually is indicated only when ob-

struction of the common bile duct has caused jaundice. Observation in the hospital, where the course of the jaundice may be followed with accuracy, is of the utmost importance. Surgical intervention should be deferred until the degree of jaundice, indicated by the amount of bilirubin in the blood serum, has reached a low level, or until the jaundice is seen to be increasing despite treatment. Intravenous administration of calcium chloride has been shown by Walters to increase the coagulating properties of the blood. This may be given in doses 0.5 gm. in 100 cc. of physiologic solution of sodium chloride each day for several days prior to operation. Transfusion of whole blood has been found to be of exceptional value, particularly in decreasing the tendency to bleed. Regeneration of injured hepatic tissue is aided by a high-carbohydrate diet. For this reason, jaundiced patients are encouraged to eat such articles of food as contain a high proportion of carbohydrate. It will be seen that these measures are all intended to combat the three main surgical complications of obstruction of the common bile duct, namely, hemorrhage, hepatic insufficiency, and renal insufficiency.

Postoperative treatment. Hemorrhage and hepatic insufficiency are the chief causes of the relatively high mortality associated with surgical procedures among jaundiced patients. Transfusions of whole blood are of inestimable value in combating hemorrhage, and intravenous injections of a 10 per cent solution of glucose aid in regeneration of injured hepatic parenchyma. When adequate food can be taken by mouth, the patient should be encouraged to take foods rich in carbohydrate, with added candy and corn syrup.

In conclusion, it should be emphasized that dogmatism has no place in surgery of the biliary tract. Each patient presents an individual problem from every point of view. For this reason, surgery of the biliary tract is more than ordinarily interesting and satisfying.

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FUNCTIONAL EVALUATION OF PERMANENT PARTIAL DISABILITIES

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(Read before the Forty-third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7 to 9, 1934.)

In considering the Workmen's Compensation Law, one is impressed with the fact that one of the fundamental purposes of the law is to provide workmen injured in the course of employment with compensation, first, for wages lost during the period of total disability, and, second, for some portion of the wage he is later unable to earn because of a permanent partial disability resulting from the injury sustained. Further, the law provides an Industrial Commission to determine the amount of such compensation to be paid in accordance with the provisions of the law and the disability present in each case.

In determining the disability in a given case of injury, the Industrial Commission is almost wholly dependent on those members of the medical profession of the state who are doing industrial surgery, in deciding, first, when the injured man may return to some or all of his work, and, second, what part of his former work or some new work he is able to perform.

On assuming the office of the Medical Referee to the Industrial Commission of Arizona, one of the outstanding problems to come to my attention was the fact that the number of different opinions as to the disability present in any given case, was limited only by the number of examining surgeons. Because of the confusion arising out of these various opinions, there has resulted a condition of dissatisfaction wherein many of the workmen think they are not getting all the compensation to which they are entitled and wherein most of the Commissioners think they are perhaps too liberal with the state compensation fund.

The estimation of disability should not be an expression of personal opinion, often more or less influenced by circumstances of one kind or another, but should be determined by uniform methods of examination based, insofar as may be, on accurate scientific measurements. It is the purpose of this paper to present methods of examination based on functional impairment, with the idea of developing a more-or-less uniform type of examination of industrial disability by the surgeons of our state and, consequently, a more uniform opinion as to the percentage of disability present in a given case.

In considering disability, we speak of a total temporary disability as covering the period of time immediately following an accident, when the workman is under treatment and unable to perform any of his work, during which period he is on full compensation. There may be a partial temporary disability, when a part of the work can be performed, and the compensation is based on the difference in the wages then earned. Later, the injured man may completely recover and be discharged without further compensation; or, he may be left with a permanent disability—either total of some part or the entire body, or partial—and here, too, compensation is based on the loss of wage-earning power and continues for a greater or less length of time, depending on the percentage of permanent disability determined. In the case of total loss of certain members—such as a hand, a foot, an arm, or a leg—the law makes specific provision based on a percentage of wage for a given number of months, varying in number with the functional importance of the member lost.

Most permanent disabilities, however, are partial and, in order to determine the compen-

sation to be provided, it is necessary to determine the percentage of disability of the affected members or of the whole body, as the case may be.

During the period of total disability, each surgeon with his immediate consultants is a law unto himself and is responsible to the Commission, not only in his treatment of a case and in the results obtained, but usually in determining when the period of total disability should end. The same situation usually holds true up to the point where the condition of the injured becomes stationary and the percentage of permanent partial disability is to be determined. It is at this point, when the case comes up to the Commission for determination of a permanent award, that the Claims Department and the Commissioners require an additional service from the industrial surgeon in order that the Commission may deal fairly with the injured workman on the one hand and the state industrial fund on the other.

As the ability to earn wages depends upon the functions of the body, so must the loss of function determine the disability present. Function, as determined by Martin, Falconer, Kessler, and others, is a mensurable quantity and one which can be reduced to percentages, either as compared with the uninjured corresponding members or with determined average functions.

Function, as it relates to industry, resolves itself into three factors: (1) motion; (2) power; (3) coordination. The function of motion is the movement of the bony segments at the joints: power relates to the power of the muscles to produce motion; while coordination mostly depends on impulses from the brain through the peripheral nerves to direct the muscles to produce motion. Each of these components of function can be measured and the percentage of lost function in the individual case ascertained in a fairly accurate manner. Dr. Kessler has said that "the endless variety of end results of injuries is no obstacle in the determination of lost function, since the method is the same; the sole aim is to measure loss of function of the disabled member after fracture, nerve injury, tendon and muscle injury. Age does not affect the accuracy of the method—for the more serious results in the older person are manifested in a correspondingly greater loss of function."

Practically all permanent partial disabilities resulting from industrial injuries manifest themselves in loss of function in one of three regions: (1) upper extremity, consisting of the arms and hands; (2) lower extremity, consisting of the legs and feet; (3) trunk. Loss of function of special organs, such as the eye, ear, and so forth, have to do with special determinations and will not be considered at this time.

The upper extremity, from a functional standpoint, has to do mainly with prehension and the manifold acts which may be performed by the hand as a tool, aided and abetted by the arm as a lever for the tool and activated through the coordination of the muscular movements by the brain through the peripheral nerves. Anatomically we have, in the upper extremity, two radicals—the arm radical and the hand radical. The function of each one is equally dependent on the other and, without either one, the other has lost much of its usefulness. In each radical we have the three functions—motion, strength, coordination—again, each equally dependent on the other; so, in estimating disability, the greatest loss of any function in either radical is taken as the index of the loss of that radical, for no chain is stronger than its weakest link.

As the upper extremity deals with prehension, so the lower extremity deals with support and locomotion. Here, again, we have two radicals—the leg radical and the foot radical —and each one, again, dependent on the other and the usefulness of each dependent on the three functions of motion, strength, and coordination, each equally important. Again, the greatest loss of any function in either radical represents the loss of that radical.

In considering the trunk, we are reminded that we are dealing chiefly with the spinal column, which forms the support for the whole body. The head rests on its upper end; the chest and its contents, the upper extremities, the lower extremities, and the trunk, itself, are all attached to it. The spinal canal, also, contains and protects the spinal cord. Our present interest, however, concerns the functions of motion and strength principally as relating to the backbone and the muscles controlling it.

STRIAL COMMISSION OF ARIZONA
CHART
of
FUNCTIONAL MEASUREMENTS

MOTION—LEG RADICAL

Hip:	Nml.	Rt.	Lft.	
Flex. Ext.	160°			
Abd'n	65°			
Rota'n	80°			
Knee:				
Flex-Ext.	120°			
Rota'n	18°			
Ankle:				
Flex-Ext.	50°			% of loss
Inv.-Ever'n	50°			
Totals	543°			

MOTION—SPINE

Head:	Nml.	Pres.	
A.-P.	115°		
Lateral	80°		
Rota'n	110°		
Trunk:			
A.-P.	130°		
Lateral	80°		% of loss
Torsion	180°		
Totals:	695°		

STRENGTH—LEG RADICAL

	Rt.	Lft.	
Thigh flexors			
" extensors			
" abductors			
" adductors			
Leg flexors			
" extensors			
Foot flexors			
" extensors			% of loss in leg
" invers'n			
" evers'n			
Totals			

STRENGTH—TRUNK

Compared with 1/3 of body weight:

Weight	1/3	Lifts	% of loss

FOOT

	Rt.	Lft.	% of loss
Weight Bearing			
Coordination—33 steps on a chalk line:			
number missed x3			

MOTION FINGERS and THUMB

	Nml.	Rt.	Lft.	% of loss
Thumb flexion:				
Met-phlngl	90°			
Intrphlngl	120°			
Totals:	210°			
Finger flexion:				
Met-phlngl	90°			
Intrphlngl	120°			
Totals:	210°			

Summary % of loss of

Arm

Leg

Hand

Foot

Finger

Trunk

..... 19.....

By.....M. D.

RURAL OBSTETRICS–DELIVERIES IN THE HOME

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(Read before the Forty-third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7 to 9, 1934.)

In the present condition of economic upheaval, child-bearing and race-propagation continue at about the same rate as usual.

A recent statement made before the New York Academy of Surgery, that "deliveries of babies in hospitals was accompanied by a greater maternal mortality rate than those deliveries in the home," at first is a startling one, and since this statement was made in a scientific meeting and not before the Sheppard-Towner Maternity Bill Committee, it merits analysis and consideration.

G. W. Kosmak reported in 1932 that there were in New York State, exclusive of the metropolitan area of New York City, 642 deaths which were associated with pregnancy. Of this number, 249 may be ruled out as being due to abortions, mostly self-induced, and non-puerperal causes, such as cardiac, pulmonary, and inter-current diseases; 243 died in hospitals, 63 per cent of these having been subjected to some surgical procedure, including cesarean section, forceps deliveries and version and extraction. Seventy-seven deaths occurred from sepsis, of which number twenty-four cases had been brought to the hospital after delivery elsewhere. There were sixty-six deaths from toxemia of pregnancy, only fourteen of which had been given adequate prenatal care; accidents of pregnancy, including hemorrhage, placenta praevia, abruptio placenta and embolism, accounted for sixty-six deaths, this group obviously being unavoidable.

After analyzing and going into case histories carefully, Kosmak does not feel competent to make absolute statements, but ventures his personal belief that half of the deaths were due to faulty management. Seventeen per cent, due to patients' own neglect, leaving 30 per cent in the non-preventable class.

After considering the above set of statistics, one asks himself the question, "Is childbirth the easy, safe and normal condition we fall into the lethargic state of mind of believing?" It would appear to our casual reasoning that hospital deliveries should show a markedly reduced mortality rate from that of home deliveries. It must be realized, however, that the hospital suffers in comparison at least to the extent that any and all cases requiring surgical intervention, of necessity must be taken to the hospital, and this should attach no blame to the hospital's rate.

The causes of our high mortality rate in confinement cases are, I believe, due to:

(1) Lack of adequate pre-natal care, which means, pelvic examination, frequent blood pressure determination, frequent urinalysis, treatment of cardiac, pulmonary, and intercurrent diseases;

(2) Lack of proper technic in delivery;

(3) Desire rapidly to terminate delivery by operative procedure, and indiscriminate narcosis and analgesia. This one cause must be enlarged upon. Most of the cesarean sections, forceps and indiscriminate use of pituitrin, are done as a measure only of conserving the attendant's time, rather than as a rational therapeutic measure. When we realize that, in a recent study of cesarean sections, they were attended by 5.7 per cent mortality rate, compared with a 2 per cent mortality rate for general surgical laparotomies, we realize that this surgical measure is not a simple procedure. Forceps are used in many cases, so that the doctor may return to his office or bed.

Now that I have indicated my belief that conservative obstetrics is the variety which should always be practised, and believe, as De Lee states, "Nature is still on the job," may I offer a compliment to the general practitioner and country doctor on his conservatism and his results, which compare so favorably with those of his city colleague, who has at his disposal laboratory and hospital facilities, par excellence. Dr. Blank of Route 1, if his training, ability and judgment are that of the average rural practitioner, will go and see his patient and, after he determines she is in the early part of the first stage of labor, will either leave her, or stay all night, giving her the necessary and all-important time for dilatation to take place, rather than giving pituitrin, or advising application of high forceps, with its resultant cervical and perineal lacera-

tions. Maybe the distance from the hospital and lack of contact with aspiring gynecological surgeons is a factor in his very patient and expectant conduct of the case; the fact remains —conservative. obstetrics is being practised, and his patients are the grateful recipients thereof; the doctor's maternal death rate at the same time being lowered.

To summarize:

(1) Meddlesome obstetrics is not good obstetrics.

(2) Intervention is always to be the end result of careful consideration, which must be deliberate.

(3) Adequate prenatal care, by well-qualified, capable practitioners, is a necessity.

All being necessary to the successful and happy advents of our babies, the large majority of which take place in the home.

OCULAR SYMPTOMATOLOGY IN GENERAL DISEASES

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We wish to present for your consideration and discussion some of the commoner ocular signs and symptoms, both subjective and objective, that are so often found in general diseases. In some cases these symptoms are of paramount importance or even pathognomonic of the disease, but in other cases, they are only one of the concomitant signs of the illness with no special diagnostic significance. In other conditions they may be of great prognostic or therapeutic value. We need only mention the contra-indication to the use of arsenicals in acute lues with ocular fundus involvement, and the prognostic significance of albuminuric retinitis in a case of Bright's disease.

We will take up first some of the commoner ocular symptoms found in general diseases, and then we will mention briefly the different causative possibilities. We will mention some of the ocular manifestations of different diseases, taking them up under the following systems: (A) Ocular symptoms of diseases of the central nervous system. (B) In diseases of the glands of internal secretion. (C) Ocular symptoms in poisons. (D) In the infectious diseases. (E) Diseases of circulation. (F) Diseases of the respiratory tract. (G) Diseases of the digestive tract. (H) Diseases of the blood stream. (I) Diseases of the kidneys. (J) Diabetes. (K) Diseases of the female generative organs. (L) Skin diseases, and (M) Hereditary eye diseases.

In no other structure of the body is the termination of an artery and the commencement of a vein presented to view, nor are the naked live nerve fibers visible except in the interior of the eye or fundus oculi. The eye is distinguished from all other organs of the body in that its tissues are transparent. Here can be observed currents of living blood circulating within the vessels, and also the secret process of disease and repair. Within the deep tissues of the eye we can see hemorrhages and exudates appear and disappear, blood vessels pass through the various stages of degeneration, and neoplasms develop. It is unfortunate that these open secrets should be kept from any practitioner of medicine, particularly as many insidious diseases are manifested early in the eye, and frequently are the first indication of disease, as in nephritis. Arteriosclerosis or grave diseases of the nervous system, if present, may become known first through an ophthalmic examination.

One of the commonest complaints of a patient is loss of sight. It is always important to know the exact amount of vision. The history and onset of visual loss should be completely noted. In many diseases the visual loss comes on acutely, as in eclampsia, hemorrhage, retinal detachment during pregnancy, and so forth. Marked refractive errors can be exaggerated during illnesses and also produce a more-or-less sudden visual loss. One should carefully study the condition of the lids and lachrymal apparatus. Any redness, edema, pigmentation, hemorrhage, scars, atrophy, relaxation of the lids and motor anomalies, as for instance, inability to open the lids or spasm of the lids with twitching, or inability to close them, as in Bell's palsy, should be looked for. Widening and narrowing of the inter-palpebral space should be observed. Redness and irritation of the conjunctiva and lids may be due to inflammations, chronic infection of the nasal accessory sinuses, or allergy. Edema of the

lids may be of diagnostic importance in heart disease, Bright's disease, or myxedema. Pigmentation of the lids is a common finding in elderly people, but it may be due to Grave's disease, Addison's disease, or jaundice. Hemorrhages into the lids or conjunctiva are commonly due to traumatism, but very often they are associated with skull fracture. They may be petechial and due to septicemia. Atrophy and relaxation of the eyelids is often seen in angioneurotic edema. Motor anomalies of the lids may be due to nerve paralyses. Blepharospasm may be associated with dental infections, nasal accessory sinus infections, chorea, epilepsy, hysteria, tetanus, and certain intracranial conditions, as meningitis and tumors.

In the course of an examination, it is very important to note the position of the eye in the orbit. Any exophthalmos, unilateral or bilateral, should be noted. The character of the proptosis must be analyzed further. It must be noted if the eye is pushed down and out, or in and out, or downward. The eye may recede into the orbit. This is called enophthalmos. When bilateral exophthalmos is observed, in addition to Graves' disease, one must think of high myopia or nearsightedness, for in this condition the anterior-posterior diameter may be 6 to 8 mm. greater than normal. Syphilis or tuberculosis of the orbital bone or periosteum, must be borne in mind in unilateral exophthalmos, and even tuberculosis of the lachrymal gland. Tumors of the orbit, particularly sarcoma, displace the eyeball forward. It is of interest to know that the deeper into the orbit the tumor is placed, the greater the disturbance of motility, and the greater the visual disturbance and papilledema or choked disc. Thrombosis of the cavernous sinus is usually due to traumatism or infection extending from the orbital veins into the cavernous sinus. This produces an edema of the cellular tissues of the orbit and thus exophthalmos. Following infectious diseases like scarlet fever or measles, influenza, or sinusitis, one may get a thrombophlebitis of the orbital veins with subsequent proptosis of the eyeball. Inflammatory involvement of the whole interior of the eye, or panophthalmitis, produces a marked edema of the orbit, with resulting protrusion of the eyeball. Inflammations of Tenon's capsule, occasionally found complicating "flu" or rheumatism, may also produce unilateral exophthalmos. Pulsating exophthalmos is usually due to an arteriovenous aneurysm produced by rupture of the internal carotid artery into the cavernous sinus. A case of intermittent exophthalmos reported by DeLord, was due to varicose veins in the orbit, producing a proptosis of the eye under physical exertion. Paralysis of ocular muscles may produce a certain degree of expohthalmos. The commonest cause of binocular exophthalmos is Graves' disease or exophthalmic goiter. We are all familiar with the ocular phenomena such as lagging of the upper lid when the patient looks down (von Graefe sign), infrequent closure of lids (Stellweg's sign), insufficiency of convergence (Mobius sign), and so forth.

The sinking in of the eye, or enophthalmos, may be produced by extreme emaciation, paralysis of the sympathetic, conjunctival defects, traumatisms and operations on the ocular muscles.

Headache is another very common complaint and one which is important in the diagnosis of general diseases. The patient describes these head pains in various ways. Some refer the pain to the back of the neck, and this is often due to involvement of the rhinopharynx and sphenopalatine ganglion. Again, patients complain of morning headaches which gradually improve as the day goes on. This is usually due to sinus involvement. Others complain of supra-orbital headache which later is referred to the occiput and back of the neck, this coming on after use of the eyes. This is usually due to intra-ocular and extra-ocular muscle imbalance, with or without refractive error. Convergence insufficiency is usually the muscle defect responsible for the headache, and not infrequently the imbalance is due to sinus involvement. Therefore, it is the mixed type of headache that one sees as a rule which is made up of a combination of chronic sinus infection together with an error of refraction and a muscle imbalance. As small an amount as ¼ or ½ of a diopter of astigmatism is sufficient to produce a headache, and some estimate that as high as 50 per cent of functional headaches can be due to ocular diseases. Another very common ocular symptom of general disease is diplopia, or double vision. This is due to paresis, or paralysis, of one or more of the ocular muscles. The diplopia is noted when the vision is directed in the field of action of the paral-

yzed muscle, and the distance between the images increases as the eyes are turned to the side of the paralysis. Of course one also notices the lag in the movement of the affected eye if the eyes are turned toward the paralyzed side. Dizziness and confusion are very often associated with double vision. When the levator muscles are involved, a compensatory torticollis may develop. After studying carefully the production of the diplopia, it is easy to determine the nerve involved and also to determine the location of the lesion. Conditions that usually produce paresis, or paralysis, of an ocular muscle, are multiple sclerosis, encephalitis, botulism, diphtheria, influenza, and certain organic poisons.

Pupillary reactions are often important in the diagnosis of general diseases. We need only mention, first, the Argyll-Robinson pupil. In this condition the pupil fails to react to light but does respond to accommodation and convergence. This symptom is commonly found in locomotor ataxia or tabes and general paresis and is usually due to syphilis. However, this failure of the pupil to react to light has been seen also in encephalitis, multiple sclerosis, and cerebellar neoplasms in the region of the ventricles. Pupillary inequality is also noted in lues but can also be found in involvement of the cervical sympathetics. This is often seen in apical tuberculosis, where the involvement of the cervical sympathetic reflexly produces a dilated pupil on the side of the involvement. Of course, blindness produces a failure of pupillary contraction when light is thrown into the eye. There are other true inflammatory conditions of the iris and uveal tract which produce faulty pupillary reactions and pupillary inequalities, but these we need not mention in a discussion of this kind. We occasionally find a very small pupil, or miosis. This is produced by involvement of the cervical spine and is seen in cases of syringomyelia, or syphilitic involvement. The condition is then called spinal miosis. Other inflammatory conditions of the brain and meninges may also produce pupillary symptoms.

We would like now to mention briefly a few of the commoner diseases of the central nervous system and the ocular symptoms produced by these.

Pachymeningitis interna hemorrhagica, or dural hematoma, is seen in patients suffering from progressing paralysis, arteriosclerosis with hemorrhage, or sometimes after birth traumas. The symptoms depend, of course, on the size and location of the hematoma. The entrance of blood into the optic nerve sheath causes an optic neuritis or choked disc which is the ocular characteristic of this condition. The choked disc is usually one-sided and is of diagnostic value. Occasionally hemorrhages are seen in the retina. Ocular muscle paralyses are not a part of the condition, as a rule. Conjugate deviation of the eyes is a frequent symptom combined with head rotation and nystagmoid movements. The pupils show no changes.

In tuberculous meningitis the pathological lesion is never purulent but generally consists of a fibrino-plastic exudate with miliary tubercles. Since the involvement is usually of the base of the brain, the large cranial nerves, particularly the optic pathways and the motor ocular nerves, are affected. Ophthalmic signs are present in the eye grounds in nearly one-half of the cases. The most important change is an optic neuritis. The disc is congested and cloudy and the margins are blurred, but there is no distinct elevation of the disc. The typical choked disc is a very unusual symptom in tuberculous meningitis, occurring in only about 5 per cent of the cases. When there is a marked optic neuritis, associated retinal hemorrhages are sometimes found. Disturbances of the ocular muscles occur in 50 per cent of the cases of tuberculous meningitis. The third nerve seems to be the most frequently involved, although it is not so frequently affected as in syphilitic basal meningitis. Twelve per cent of the cases show involvement of the third nerve. An isolated ptosis is noted in 10 per cent of the cases. Uhthoff is of the opinion that the tuberculous meningitis process does not affect the nerve trunks themselves, but the symptoms produced are due rather to the presence of exudate about the nerve, so producing only a moderate paresis, or ptosis. The sixth nerve, or abducens, is involved in 15 per cent of the cases. The pupils show an important change in tuberculous meningitis; namely, a disturbance of the light reaction. This has been found in 15 per cent of the cases and was usually seen in patients in deep stupor. A difference in the size of the pupils independent of illumination has been described by a num-

ber of authors. During Cheyne-Stokes respiration, dilatation of the pupils has been observed at the onset of the respiratory phenomena and a contraction during the rest period.

Another important disease of the central nervous system showing ocular symptoms, is epidemic cerebrospinal meningitis. Conjunctivitis has been observed in many of these cases. Corneal involvement has also been noted. The involvement is herpetic in character, giving us herpetic keratitis or a dendritic keratitis. These symptoms result from conditions similar to febrile herpes which occur so frequently in meningitis. Seventeen per cent of the cases of epidemic meningitis presented an optic neuritis with congestion and slight edema of the nerve head. The typical choked disc is very unusual. Disturbances of vision without ophthalmoscopic changes are not infrequent and are usually the result of exudative processes affecting the optic pathways or the visual cortex in the occipital globe. Another symptom of epidemic meningitis which is of interest to us is metastatic ophthalmia. The clinical picture is somewhat characteristic. The external inflammatory symptoms are slight. There is a yellowish reflex from the depth of the eye, with moderate iritis. If the inflammation is severe, the intra-ocular tension is reduced, there is a marked flattening of the anterior chamber and a bulging of the iris. Sometimes the eye is lost. Although metastatic ophthalmia in meningitis is unilateral, in a few cases both eyes have been affected. Metastatic ophthalmia may be one of the first symptoms of the general infection. It does not necessarily mean a severe general infection, as it is sometimes seen in unusually mild cases. The infection is hematogenous and affects either the retina or the choroid. The intra-ocular inflammation is very rarely due to a direct inflammatory extension along the optic nerves. Other infectious organisms may produce similar changes, though as a rule these organisms, if they lead to metastatic ophthalmia, produce a clinical picture very much more marked, and give rise to panophthalmitis with perforation of the eyeball and phthisis. Disturbances of the ocular muscles are important and occur in 15 per cent of the cases. The sixth nerve is most frequently affected, presumably on account of its course along the base of the brain. The third nerve is occasionally affected. It takes the form of a partial paralysis, particularly a ptosis of moderate degree. Conjugate deviation of the eyeballs is infrequent. Nystagmus is not an important symptom, and pupillary changes are neither frequent nor characteristic.

Brain tumor is not a very unusual condition and presents some very characteristic ocular signs. The most frequent change in the eye in brain tumor is a lesion of the optic nerve which occurs in the form of papilledema or choked disc, optic neuritis and simple atrophy. These are usually due to increased intracranial pressure. This increased pressure is usually accompanied with internal hydrocephalus, which surely plays the main role in the development of choked discs. Statistics have shown that choked disc, or optic neuritis, occurs in about 80 per cent of the cases. Of course the frequency of choked disc in brain tumors depends somewhat on the location of the neoplasm. Gowers has shown that tumors arising from the meninges and exerting compression on the brain, produce disc changes less frequently than those which grow in the substance of the brain. If the tumor is compressing the brain, the symptoms will depend upon the rapidity with which the growth takes place. Tumors in the pituitary region produce choked disc in only 20 per cent of the cases, but optic atrophy is here the predominating change. Eighty-eight per cent of the tumors of the cerebellum or posterior fossa produce choked disc. Tumors of the pons produce disc changes in 70 per cent of the cases. Of course there are changes in the fields of vision. In many of these cases we see enlargement of the blind spot, concentric contractions, hemianopic changes, and even central scotomas, but it is not within the scope of this paper to go into detailed field changes. Muscular paralyses are found in 34 per cent of brain tumors. Twenty-five per cent are true paralyses of ocular muscles. In 9 per cent the changes are more in the associated movements and nystagmus. The sixth and the third nerves are the ones involved in most cases. Paralysis of the lateral movement, or vertical movements, and of convergence, are rarely symptoms of tumor. The pupillary changes in tumors of the brain offer us but a few points of diagnostic importance.

Ocular symptoms of head injuries are often of great diagnostic importance. Fractures of the base of the skull are more apt to give eye symptoms because of the location of the optic nerves and the central optic pathways. We must distinguish between the eye symptoms due to the primary injury and the secondary signs which result from the many changes which follow these injuries. The secondary charges are the result of increased intracranial pressure or areas of softening, the formation of callus, inflammation, osteitis, meningitis, encephalitis, brain abscess, pulsating exophthalmos. Basal fractures frequently involve the bony optic canals, and may produce a hemorrhage into the open sheaths. Complete and immediate blindness may result from severance of the optic nerves. The after results of brain injuries depend on whether there is cerebral hemorrhage, increased intracranial pressure, infection, and so forth. Where we have an increase of pressure, we may have a choked disc and other visual disturbances which we have mentioned before. Loss of sight in one eye with a negative ophthalmic picture and later followed by simple optic atrophy, is a very much more frequent change in skull injury than either optic neuritis or choked discs. Retinal hemorrhages are occasionally seen. Injury of the skull sometimes causes a condition called traumatic necrosis, which is characterized by a functional concentric contraction of the visual field without ophthalmic changes. All the extraocular nerves are liable to injury from the fracture at the base of the skull. Depending on which ones are involved, we have our characteristic diplopia and limitation of movement of the globe.

The most important early symptoms of multiple sclerosis are usually ocular. Some authors report that the optic nerve is affected in 50 per cent of the cases. This disease probably begins in early childhood, many years before any of the symptoms appear. Visual disturbances in multiple sclerosis are more frequent than in any other disease, with the probable exception of brain tumor. If the inflammatory process in multiple sclerosis invades the optic nerve, we have symptoms of retrobulbar neuritis, or an atrophy involving particularly the temporal half of the disc. The fundus changes are usually one-sided. The sight may be rapidly lost, as in acute retrobulbar neuritis, but usually the loss of sight is gradual. Characteristic are the fleeting disturbances in sight which may come and go. The fields of vision show a variety of changes, but central scotoma is the most frequent. These are usually relative and occur in 50 per cent of the cases. A frequent symptom is nystagmus. The ocular muscles are affected in 46 per cent of the cases. The paralyses are usually slight, incomplete. The sixth nerve is the one that is usually involved. Occasionally the third nerve is affected, producing ptosis or disturbances in convergence and divergence. There are no pupillary disturbances. In multiple sclerosis Uhthoff has shown that, following body exertion and fatigue, there is a distinct diminution in vision, especially when there is an ophthalmic involvement. A peripheric green staining of the cornea has also been described in this disease.

There are many other neurologic conditions, such as syringomyelia, trigeminal neuralgia, herpes zoster, ophthalmoplegic migraine, various types of tics, sympathetic disturbances, epilepsy, hysteria, and other neurological conditions that present ocular signs and symptoms, but time permits us only to mention them in passing.

When we come to the subject of eye symptoms in diseases of glands of internal secretion, I want to mention again, in passing, exophthalmic goiter. Though the eye symptoms occupy a prominent place in Graves' disease, they do not permit any deduction as to the course, severity, or outcome. The exophthalmos is generally bilateral but may be unilateral at first, and then it usually affects the left side. Pressure on the facial veins often increases the exophthalmos. The eye is usually pushed straight forward and the motility is not restricted. Exophthalmos is the last cardinal symptom to develop in the course of the disease and is absent in 20 per cent of the cases. Although there may be unequal protrusion of the eyes, there is no connection between the increased exophthalmos on one side and the greater enlargement of the gland on the same side. However, it has been reported that, if one side of the thyroid is removed by operation, it is not unusual to find that the eye protrusion on the operated-on side has receded. Exophthalmos may be so marked that covering of the cornea and sclera is impossible even in sleep. Luxa-

tion of the eyeball has been noted. The other usual signs I have mentioned previously. Other uncommon eye signs and symptoms of Graves' disease are mydriasis, or dilatation of the pupil, nystagmus, and disturbances of accommodation. Loew's phenomenon, which is the rapid dilatation of the pupil (after instillation of very diluted adrenalin solution) is often present. Occasionally we see optic atrophy. It has been reported that, after feeding animals on thyroid extract, optic atrophy has developed, and patients who have been treated with thyroid extract for myxedema or hypothyroidism have occasionally developed optic atrophy. Another early symptom of the disease is unintentional tearing. It is thought by some this is due to the displacement of the lachrymal puncta on account of the protrusion of the eyeball. Paralysis of the ocular muscles may occasionally be seen, and paralysis of associated movements. From faulty protection by the lid, the cornea may develop infiltrations and even ulcerations and necrosis of the cornea. Myxedema very early produces a dryness of the skin of the eyelids. They not only become dry but also inelastic and somewhat thickened. A nearly constant eye symptom of Graves' disease is the loss of hair of the brows. Groenouw mentions quivering of the eyelids as the patient attempts to close them, as an early sign. Occasionally there is seen a bitemporal hemianopsia in myxedematous cases, but this field change suggests a compensatory enlargement of the pituitary gland. Dunn, writing in the London Lancet, believes that hypothyroidism is the cause of iridocyclitis. In the use of thyroid extract, one should not be unmindful of the fact that many cases of optic atrophy have followed its prolonged use.

We wish to mention briefly the ocular changes in tetany. As you know, the disease is characterized by trophic disturbances especially of the hair, teeth, and nails, in the eye in addition to disturbances of metabolism. A very important trophic change is the development of cataract. This has been noticed when the parathyroids are injured or removed following thyroidectomy.

In diseases of the hypophysis, the signs of pressure on the chiasma, with its associated changes, are present in 50 per cent of pituitary diseases. Cases of hypopituitarism complain more of ocular disturbances than do the acromegalic cases. The ocular signs of hypophyseal disease depend on the anatomic relationship of the optic chiasm to the hypophysis. The most frequently observed visual symptom is the defect of the fields of vision. Temporal hemianopsia appears in 50 per cent of the cases. Particular attention should be given to the color peripheries. Paracentral scotomata are not uncommon. One of the most frequent ophthalmic changes in pituitary diseases, is optic atrophy, which is present in 20 per cent of the cases. Choked disc is not a common symptom. The ocular muscles are involved in about 10 to 25 per cent of the cases, according to Uhthoff. The third nerve is usually involved and is usually manifested in the form of ptosis.

Certain toxic substances have a selective action on definite parts of the visual pathways. Of the many poisons that are injurious to the eye, we might mention ethyl alcohol, wood alcohol, nicotine, thyroid extract (which we have already mentioned), quinine, optogen, anilins, arsenicals, and ergot. We shall discuss briefly only some of the commoner ones. Ethyl alcohol, like nicotine, produces a toxic amblyopia. The disturbance is usually gradual and the patient complains of fogging of the vision. The abstinence from alcohol and tobacco usually improves the symptoms. If the amblyopia progresses, we get atrophy of the optic nerve. Wood alcohol usually causes a sudden loss of sight, accompanied by symptoms of gastro-intestinal upset. The loss of sight is rapid and complete and recovery is very rare. The ophthalmoscope shows a slight neuritic change and later an optic atrophy. Occasionally retinal edema is seen, and sometimes a deep cupping, resembling a glaucomatous cupping, is seen. The pupils are usually dilated and immobile and the eyeballs are painful. Prognosis is poor. Poisoning with ergot can produce a variety of ocular symptoms. Some authors have reported a market retinal anemia with contraction of the blood vessels. Occasionally the development of a cataract is seen.

A great variety of eye disturbances are noted in the infectious diseases—typhoid, smallpox, chickenpox, scarlet fever, measles, whooping cough, mumps, influenza, diphtheria, erysipelas, septicopyemia, tetanus, malaria, gonorrhea, sporotrichosis, aspergillus, leprosy, tri-

chinosis, syphilis and tuberculosis. We just wish to mention the infectious diseases in passing and call to your attention that they may give rise to ocular symptoms. Optic neuritis, choroiditis, corneal ulcerations and infiltrations, ocular muscle palsies, are all seen.

Diseases of circulation show a variety of ocular symptoms. Under this heading we wish only to mention the eye changes in arteriosclerosis. The retinal vessels are the only cerebral arteries and veins which are visible and the only vessels wherein we are able to recognize the earliest changes. Changes in the retinal vessels occur in those cases of general arteriosclerosis in which the large cerebral arteries are distinctly affected. Hertel has said that a positive finding of sclerosis of the retinal vessels surely means a similar condition in the cerebral vessels. The earliest changes of arteriosclerosis in the retinal vessels are a slight tortuousness of the vessels, slight changes in the caliber, and a more distinct vessel reflex. The majority of authors consider this arteriosclerotic change in the fundus a serious prognostic sign and mirroring similar condition in the cerebral vessels. Other important signs of retinal arteriosclerosis, are retinal edema and hemorrhages. Where hardened arteries cross a vein, the artery loses translucency and exerts manifest pressure on the underlying vein. This is shown by the vein losing its central light streak on either side. The retinal edema is shown by the lack of the full red fundus reflex. A decided gray is present. Congestion of the nerve head is also seen.

In diseases of the respiratory tract, I want to mention herpes of the cornea, dendritic keratitis, herpes zoster involving the lids and forehead, and superficial punctate keratitis. These are usually seen in pneumonia and catarrhal or purulent infections of the nose and sinus.

In diseases of the digestive tract might be mentioned dental infections, auto-intoxication, gallbladder infections, involvements of the liver and gall ducts, the latter giving rise to jaundice. In chronic jaundice, xanthelasma occurs in the eyelids. In diseases of the liver, we also note night blindness, epithelial xerosis of the conjunctiva, hepatic ophthalmia and xanthopsia, or yellow vision. This last condition is supposedly due to bile pigments in the eye. Intestinal disturbances and infections also give rise to ulcerations of the cornea iritis, choroiditis and changes in the optic tract. I would like to mention here that vitamin deficiencies can also give rise to similar ocular conditions. In trichinosis very often we find the cysticercus in the eye. Some of you may recall the case of ocular trichina that we presented to the Society some years ago. In this case the organism was removed from the anterior chamber.

In addition to functional disturbances, there are organic diseases of the eye which are brought about by the blood dyscrasias. Under this heading may be mentioned the ocular changes seen in chlorosis, pernicious anemia, amaurosis after loss of blood, leukemia scurvy, and hemophilia, polycythemia. The changes are usually in the retina, choroid, and optic nerve, and are manifested by retinal hemorrhages and slight inflammatory symptoms in the retina and optic nerve. The retinitis of leukemia is rather characteristic. In addition to severe hemorrhages, we have small areas of degeneration. I would like to mention that complete blindness can come on following severe hemorrhages. The cases that have been reported were usually those following hemorrhages from the stomach, uterus, nose, or lungs.

Ocular manifestation of diseases of the kidneys is quite common. The eye is involved in several ways by kidney pathology, but by far the most important one is albuminuric retinitis, which occurs, as a rule, in chronic nephritis and then mostly in contracted kidney. The retinal changes are characterized in this condition by definite inflammation associated with hemorrhages and with processes due to fatty degenerations. The retina is usually markedly hyperemic and there is, as a rule, a sero-fibrinous exudation. The development of retinitis has nothing to do with the albuminuria. In every case of retinitis in which albuminuria is present, it is not necessarily due to nephritis. Renal retinitis never precedes the nephritis. It can, however, be the first symptom of the disease, which has previously run a latent course. In acute nephritis, eye involvement may occur at the same time as the first renal symptom, but by that time the fundamental disease has reached a marked development. True nephritic retinitis can occur in

all diseases of the kidney. As mentioned before, it is more common in contracted kidney. Retinitis occasionally occurs in acute nephritis, especially after scarlet fever, and these cases usually get well. Other symptoms of renal retinitis may be hemorrhages, attacks of uremic amaurosis, papillitis, optic atrophy, fatty degenerations, and retinal detachments. Leber states that retinitis occurs in 32 per cent of nephritis cases. It occurs in all periods of life, but more cases occur between the ages of 30 and 60. The appearance of retinal changes in nephritis in young adults, gives a much more grave prognostic sign as to mortality than when it occurs in adults. The retinal involvement is a direct result of the kidney condition. It is brought about by certain injurious agents coming from the blood and acting upon the vessels and tissues of the retina and generally indicates that the kidney disease has reached a certain degree of severity and probably will end in death. As a general rule, when we have albuminuric retinitis present, the prognosis for life, at the longest, is about two years. Edema of the lids is a well-recognized eye symptom in nephritis. It rarely affects the ocular conjunctiva. Sub-conjunctival hemorrhages are not uncommon; iritis and iridocyclitis have been noted, and weakness of accommodation is quite pronounced. Occasionally ocular muscle paralyses are seen.

As you all know, eye symptoms are very frequently found in diabetes. The frequency of eye complication in diabetes has been given variously from 20 to 33 per cent. It does not necessarily involve a grave prognosis for life, as albuminuric retinitis does. The involvements of the eye in diabetes according to frequency are: cataract, 30 per cent; retinitis, 23 per cent; optic neuritis, 5 per cent; ocular muscle disturbances, 4 per cent. Then come refractive changes, vitreous opacities, iritis, thrombosis of the retinal vein, hemorrhagic glaucoma, and optic atrophy. Some authors think that the most frequent disturbance in diabetes is the contraction of the range of accommodation. In other words, the reading glasses are no longer suited for the age of the patient, and you have a marked recession of the near point of accommodation. Changes of refraction are not uncommon. The onset of nearsightedness has been observed. The diabetic cataract, when occurring in young, is rather characteristic. There is a uniform subcapsular opacity that gives a bluish homogeneous sheen. The cataract does not disappear when there is a reduction of sugar in the urine. The prognosis for cataract operation, in diabetes, is nearly as good as that of senile cataract. Every case of diabetes that has existed for over ten years has some opacity in the lens. In diabetes, chronic retrobulbar neuritis is not uncommon. A central scotoma frequently exists, particularly for blue, and is absolute in contradistinction to the condition usually found in toxic amblyopia, when the scotoma is usually relative and for red. Ocular palsies are not infrequent. Occasionally in diabetes we see the retinal vessels appearing as though they were filled with milk, the condition known as lypemia-retinalis, and is due to an increased quantity of fat in the blood.

In the diseases of the female generative organs we occasionally see disturbances in ocular function, especially during menstruation. Such changes are retinal hemorrhages and low-grade optic neuritis. During pregnancy the frequent toxemias of pregnancy can give rise to inflammatory changes in the retina and other ocular disturbances. Birth injuries are not uncommon and paralysis of the ocular muscles, hemorrhages in the retina, have been noted.

Ocular changes are not uncommon in diseases of the osseous system and they are seen in such conditions as hyperostosis cranii, oxycephalia, or tower skull, rachitis, and so forth. Blue sclerotics and fragility of the bones are occasionally seen. These are usually congenital and familial.

The ocular symptoms of diseases of the skin are usually those of the disease itself. As a result, we see the lids and conjunctiva very often involved in such conditions as eczema, psoriasis, rosacea, pemphigus, erythema multiforme, favus, luetic lesions, angioma, xanthelasma, urticaria, and other forms of toxic dermatoses.

Of the hereditary eye diseases, we should like to mention, in addition to the congenital defects, two diseases, retinitis pigmentosa and buphthalmus, infantile glaucoma. Retinitis pigmentosa, which is a degeneration of the retina with characteristic pigment deposits resembling bone corpuscles in shape, and which is supposed to have to do with the consanguin-

ity, is not infrequent. We might mention also hereditary nystagmus, hereditary night blindness, hereditary color blindness and albinism and certain refractive errors.

Much of the material for this paper has been taken from the standard texts, journals, both general and special, and, finally, some of the material has been taken from our own studies and observations.

On account of the vastness of the subject, and the time limit, it has been necessary to touch only the high spots of common interest. For this we ask your forbearance. We must also apologize to the oculists for speaking in generalities. If, however, we have aroused your further interest and refreshed your memories somewhat, and created the mutual interest between the ophthalmologist and the general physician and surgeon, we feel that the presentation of this paper has served a useful purpose, for after all, every oculist must be a physician and every physician should know the fundamentals of ophthalmology.

FRATERNAL GREETINGS

S. P. VINEYARD, M. D.,
Amarillo, Texas

(Fraternal Delegate to the Arizona State Medical Association at its meeting in Prescott, June 7-9, 1934.)

MR. PRESIDENT AND GENTLEMEN OF THE ARIZONA STATE MEDICAL ASSOCIATION:

I bring you the warmest greetings from The State Medical Association of Texas, and offer you the cooperation of the medical profession of Texas in any of the enterprises of the Arizona profession which might be of mutual interest.

It seems to me that the main problem confronting us now is the economic situation, and I believe it is a rather fixed feeling in Texas that we should continue to resist, in every way possible, the onrush of socialism.

We are not objecting to the penal system of practice, or practice of State Medicine, so much from a financial standpoint as we are from the consideration that a system of this character will inevitably destroy the personal

(Continued on page 248)

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

STREPTOCOCCAL FIBRINOLYSIS

The biological study of pathogenic bacteria is, and is likely long to remain, a most fruitful field of research. A discovery of considerable significance has recently been made in regard to a peculiar property of young broth cultures of human hemolytic streptococci. Such cultures are capable, after a very short incubation, of completely liquefying human fibrin. The phenomenon was first observed, so says the Lancet,[1] by R. M. Fry of St. Mary's Hospital, London. But the realization of its full significance and further investigation goes to the credit of Tillett and Garner[2] of Johns Hopkins. These workers showed that the human body, in response to streptococcal infection, develops a specific antibody, an antifibrinolysin, which makes the human fibrin resistant to lysis. This discovery has been verified by research workers in Bristol, England,[3] who also made some interesting observations on the serum of forty-four children suffering from rheumatic heart disease. Their results add to the growing body of evidence that the hemolytic streptococci play a part, at least, in the acute rheumatic infections. Their paper also points to the possibilities for clinical investigation of this new immunological approach.

EUGENIC STERILIZATION

Two recent events are of interest to eugenists who see in sterilization of the unfit a practical program for the development of a healthier race. They are (a) the German law of 14th July, 1933, for the Preservation of Future Generations against Hereditary Diseases,[4] and (b) the Report of the British Parliament of the Departmental Committee on Sterilization.[5]

The German law allows a person with hereditable defect to demand sterilization. If the person so afflicted is a minor or is mentally incapable, the demand may be made by his legal representative. So far the act of sterilization is voluntary. But there is also provision that the demand may come from a medical of

(Continued on page 249)

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DANIEL HURST CARNS

In the death of Dr. D. H. Carns of Albuquerque on March 30th, the New Mexico Medical Society lost a loyal member of many years standing. Dr. Carns was a graduate of the Western Pennsylvania Medical College of Pittsburgh, class of 1894. He came to New Mexico in 1899 and had practiced there continually during the past thirty-five years. He was a member of the Bernalillo County Medical Society, the New Mexico Medical Society, and was a Fellow of the American Medical Association. He was sixty-four years old and the cause of death was angina pectoris and diabetes.

FRATERNAL GREETINGS

(Continued from page 247)

relationship of physician to patient, and the ambition of the young doctor starting in the practice of medicine. These are the two really important factors in the whole situation. I think it quite clear that, with our prestige and power, we could negotiate quite an attractive contract for the practice of socialized medicine, so far as the great bulk of the profession is concerned. But the trouble is and would be, should such a system be adopted, that our masters would soon reduce the financial advantages involved to the least denominator and our condition would be worse than it was before.

It seems that the medical profession in some of the northwestern states is thoroughly imbued with the idea of socializing medicine and will make a fight for it at the Cleveland session of the American Medical Association. The delegates from Texas will resist such an effort and we would be pleased to have the profession of Arizona join in with us, provided, of course, you see the matter as we do.

Let me say that the attitude of those who are really thoughtful is, that if the majority of our members want some such thing, then we should be for it, but we must be very sure that our members understand what it is all about and what the prospects are and that a decision be made by a majority and not by a minority.

Our Association is for a continued study of the economics of medicine and we have some high-powered machinery at work in this regard, but we are deferring any compelling decisions until the American Medical Association Council on Medical Economics has completed its investigations and shaped the problem up in a more concrete way than it has thus far been shaped. We realize that a mistake along this line can very easily be made and we very much desire the cooperation of the medical profession of Arizona in this continued study of economics.

It is to be remembered that we should guard well our excellent code of ethics, and enforce it to the letter, not being led into new and untried channels without thorough investigation as to where we are being led.

Our Association has also made a close study of the matter of emergency medical relief. We have made a splendid contract with the Texas Relief Commission and it has worked nicely, except that there has not been a sufficiency of

funds. Lacking in funds, the Texas Relief Commission has lately assumed to do little more than feed the hungry, leaving the sick to shift for themselves and, in effect, making them the burden of the medical profession rather than of the public, as it rightly should be. It seems to know that the medical profession is not going to let the public die for want of attention. Our position in this connection is, that it does not do much good to feed a dying man, for which reason a certain amount of medical service is deemed basic and on a par in value and necessity with food relief. We are glad to extend this idea to you for whatever it may be worth. We believe it is the basic principle of the Federal Government and should be the principle of each State Government in connection with federal and state relief.

We have 125 component county medical societies, with a membership of just a little better than 3500.

Our recent State Meeting in San Antonio was one of the most successful, profitable and delightful we have had in a long time. The attendance was exceptionally good. The total attendance of doctors was 1168. Of these, 1115 were members and fifty-three were visiting doctors. In addition to that, there were fifty exhibitors, and more than 400 women. The scientific work of the meeting was of exceptional value, particularly our scientific exhibits.

There are, of course, many other matters of mutual interest which might be discussed, but time will not permit.

I appreciate, more than I can tell you, the way you have received me here among you, and I extend to you a most hearty invitation to come to our next State Meeting in Dallas, in May, 1935.

PUBLIC HEALTH NOTES

(Continued from page 247)

ficer of health or the director of an institution (for inmates of the institution).

The district Court of Hereditary Health is the court of first resort. It is composed of a judge, a doctor, and a medical eugenist. Applicants may appeal against the decision of this court to the Erbgesundheitobergericht, whose decision is final.

The British committee "believe that few who approached the question with an open mind and listened week by week to the evidence we have heard, could have failed to be struck by the overwhelming preponderance of evidence in favor of some measure of sterilization." Their recommendations are unanimous. But they are not in favor of compulsion. They agree with a witness who said that "compulsion defeats itself."

The report is too long and contains too much material to be summarized in this column. It may be borrowed from the library of the New Mexico Bureau of Public Health.

A REQUEST AND AN OFFER

May I beg New Mexico physicians please not to certify births under the name of foster parents. Such notification was made the other day and would not have been detected had not a health officer protested because the unmarried mother received the regular notification certificate. The doctor in this case had notified the birth twice, thus protecting the legal interests of the child but falsifying the birth rate and the infant death rate, which depends on the birth rate. If only the second certifi-

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cate had been sent in (that giving the names of the foster parents) the child would never have been able to establish his age or citizenship in law. This is perhaps of more importance than is the effect of such an entry on New Mexico's illegitimate birth rate.

The State Board of Public Welfare has promulgated regulations which, I believe, adequately protect the secrecy of official birth and death records. And I will venture to predict that, by the time present babies have grown to adulthood, it will no longer be considered a matter of personal merit or demerit to have been born of a saint or of a sinner.

The important contribution on Standard Treatment Procedure in Early Syphilis, published in the Journal of the American Medical Association for April 21, 1934, has been reprinted. A reprint of this article will gladly be sent to any reader of Southwestern Medicine.

1. Edit., Resistance to streptococcal fibrinolysis in rheumatic children. Lancet, 1:853 (April 21) 1934.

2. Tillett, W. S.; and Garner, R. L.; J. Exp. Med. 58:485, 1933.

Tillett, W. S.; Edwards, L. B.; and Garner, R. L. J. Clin, Invest. 13:47, 1934.

3. Hadfield, G.; Magee, V.; and Perry, C. B Lancet 1:834, 1934.

4. Reichsgesetzblatt 50:529, 1933.

5. London: H. M. Stationary Office, 1934. pp. 137, price 2 shillings.

BOOK REVIEWS

THE CHINESE MEDICAL JOURNAL—Nov.-Dec., 1933; Published Monthly, Professor Fulleborn Memorial.

Fredrich Fulleborn, director of the Institute for Tropical Diseases at Hamburg, died in 1933 at age of 67. His was an interesting, forceful presonality. He combined great ability as a scientific investigator with that of lecturer and orator.

He was an authority upon filaria. His last writings were upon the immunology, and allergy of helminth infections. His knowledge of tropical diseases in general was wide.

This issue of the Journal, the size of a small book, has 28 original articles upon rala-agar, malaria, mosquitoes, spirochetosis, filaria, mites, nematodes, cysticercus, tapeworms, ascaris, together with editorials and book reviews. There is an extensive index. There are many beautiful and interesting cuts. The printer's art is excellently portrayed. —O. H. B.

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A. D. Long, M. D.
Medical Director

MEDICAL CLINICS OF NORTH AMERICA: (Issued serially, one number every other month); Volume 17, Number 5; (New York Number, March, 1934); Octavo of 324 pages with 32 illustrations; Per Clinic Year July, 1933, to May, 1934, Paper, $12.00; Cloth, $16.00 net; Philadelphia and London; W. B. Saunders Company; 1934.

The Medical Clinics of North America are always of exceeding interest; but this one seems to be more nearly superlative than are most of them. The papers in this number are devoted very largely to heart, blood vessels, metabolism and kidney. Than these subjects there is none of more interest to the average practitioner. All articles are practical. For example, Dr. Donald D. Van Slyke, in 15 pages, gives the various tests for renal function. Dr. L. Lichtwitz in nine pages discusses the angiospastic diathesis. Dr. Harlow Brooks discusses three cardiac cases. There are excellent papers on burns, peptic ulcers, malnutrition, anemia, impaired hearing, etc. —O. H. B.

MODERN CLINICAL SYPHILOLOGY. By John H. Stokes, M. D., Duhring Professor of Dermatology and Syphilology, University of Pennsylvania; Member Commission on Syphilis and Cognate Diseases, League of Nations Health Organization. Second Edition. Revised and entirely reset. 1400 pages with 973 illustrations and text figures. W. B. Saunders Company, Philadelphia and London, 1934. Cloth, $12.00 net.

This large volume is a compilation of the present day knowledge of this most important and varied clinical entity. Fifteen of the original twenty-three chapters have been rewritten for this edition, and the world's literature on this subject has been surveyed and presented in a readable and interesting form. The illustrations are abundant and include the usual as well as the rare manifestations of the disease, acquired from the mass of clinical material which has been available to the author and his collaborators. The recent achievements in the treatment of cardiovascular syphilis and neurosyphilis are adequately presented, including technic of malarial and pyreto therapy.

This work provides an unexcelled reference book on the subject of syphilis, for the general practitioner, and a valuable addition to the library of those specializing in dermatology and syphilis.
—H. P. M.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1933. Cloth. Price, Postpaid, $1.00. Pp. 188. Chicago: American Medical Association.

A feature of marked current interest in this volume is the preliminary report on Alpha-Dinitrophenol, the new drug for acceleration of cellular metabolism. The Council voices a warning on the dangers attending the use of this drug; this warning has been increasingly justified in reports of fatalities since the appearance of the Council's reports which make this volume one of the most interesting issued by the Council in recent years are those on Dilaudid, a new narcotic drug related to morphine; Fuadin, a new antimony compound for use in the treatment of bilharziasis and granuloma inguinale; and Hippuran, a new product for intravenous and oral urography. The comprehensive and definitive special report on estrogenic substances furnishes a much needed review of the present status of such products in gynecologic therapy.

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Holden and Gurnee, Am. Jour. Obs. & Gyn. July, 1931.
Holden and Sovak, Am. Jour. Obs. & Gyn. Nov., 1932.
Counsellor, Jour. A.M.A. Sept. 16, 1933.
Graham, Am. Jour. Surg. June, 1933.
Stone, Am. Jour. Physical Therapy, April, 1932.
Jacobs, St. Louis Med. Soc. Bulletin, Discussion by Vaughan and Gellhorn, June 5, 1931.
Holliday, Jour. of Dental Research, Dec. 1932.
Shullman, Jour. of Med. Soc. of New Jersey, 1933.

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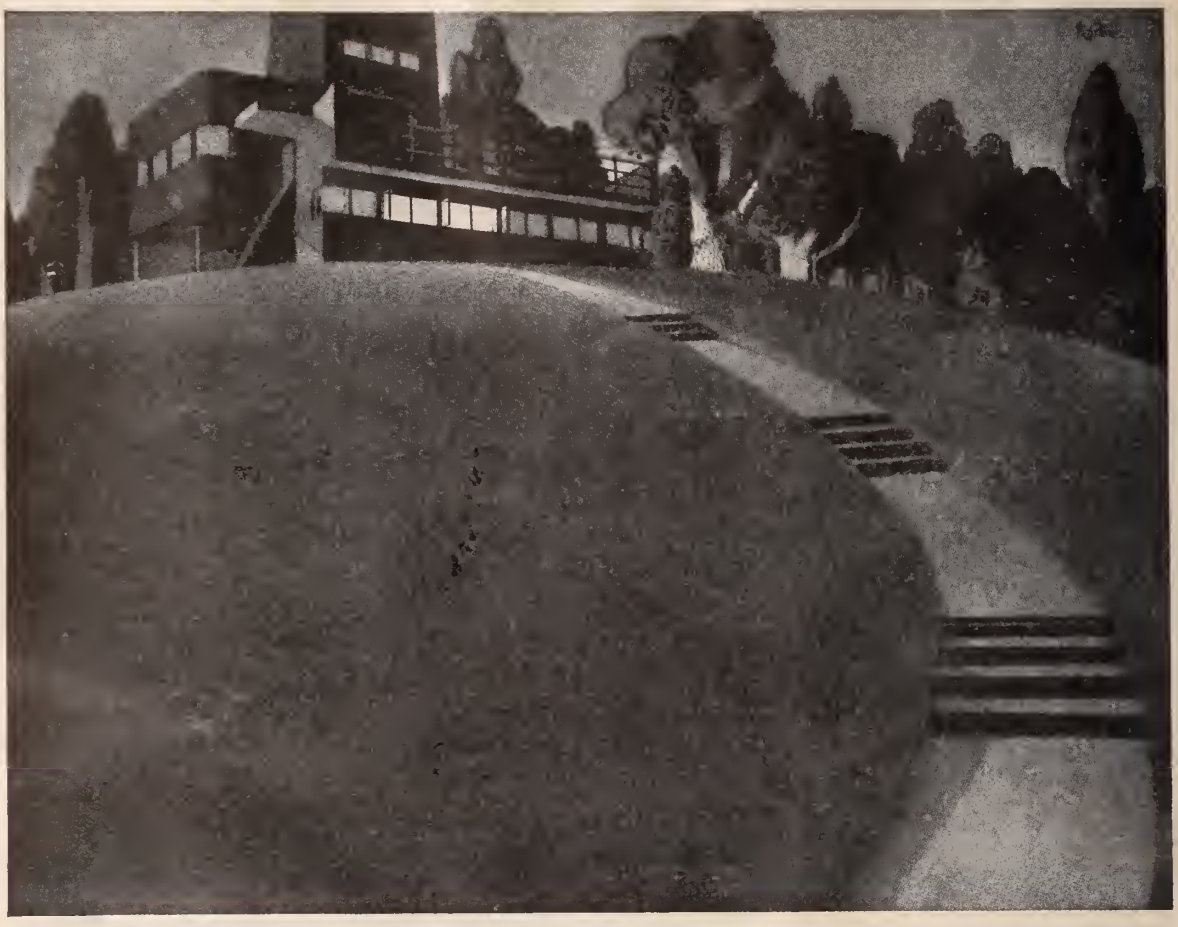

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The goal the whole world hopes for has not yet been reached. But important progress *has* been made. Today, cancer is *not* hopeless. Today, many forms of cancer *can* be cured.

But each of these statements is true only when qualified with a very important "IF"—that is, *if* the case is put into the hands of a trained physician in its early stages. As insignificant a period as one month can assume the importance of eternity—a cancer that might be cured today, may be beyond help in a single month.

How can one detect its early stages? The symptoms are so variable that it's futile, as well as dangerous, for the layman even to attempt an accurate diagnosis. But there are warnings, of which these are outstanding: a lump that won't go down . . . a sore that won't heal . . . persistent bleeding or any other persistent unnatural discharge from any part of the body . . . persistent unexplained indigestion.

These symptoms do not necessarily mean cancer. But they're reason for suspicion; and reason, therefore, to see your doctor immediately. If it *is* cancer, the tumor can, in many cases, be *completely removed* by surgery. In many others, it can be controlled by the proper use of x-ray or radium.

And if it *isn't* cancer, the relief that comes with banished fears and worries, will be a rich reward for doing the wise thing—for seeing your doctor when you first suspect that something may be wrong.

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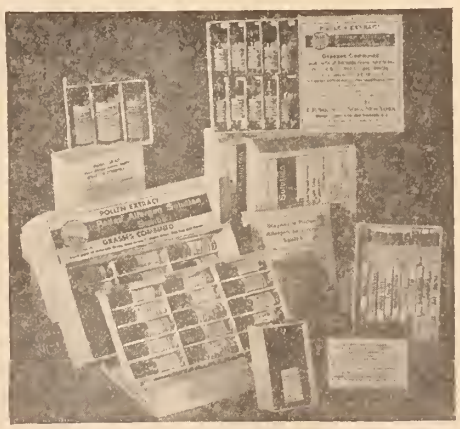

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Vol. XVIII AUGUST, 1934 No. 8

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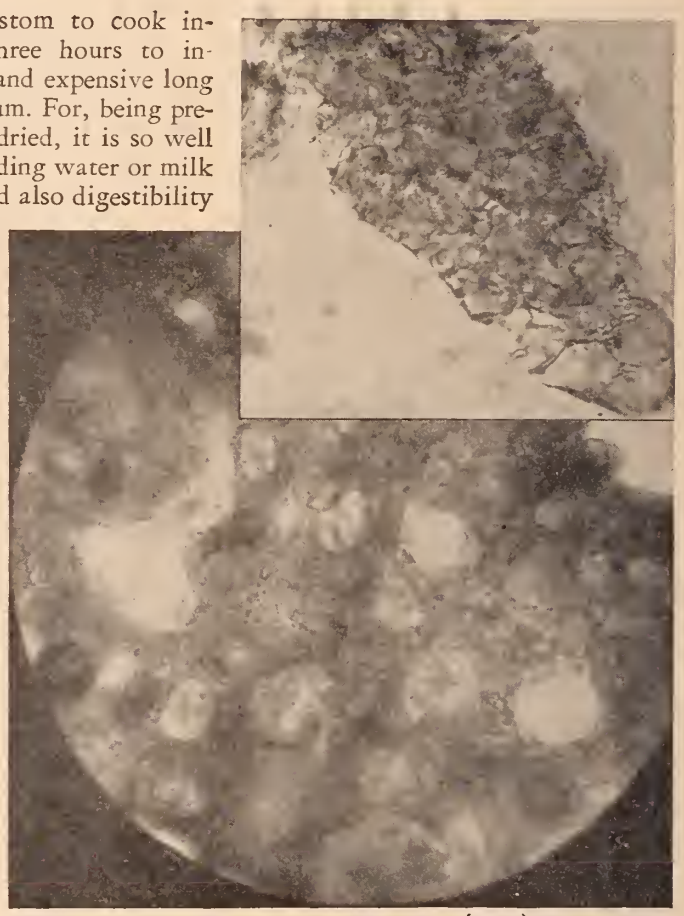
Fifteen cereals (both cooked and uncooked) studied microscopically were revealed as containing many starch granules, most of them massed into dense clumps. *Such unruptured clumps were never observed in hundreds of examinations of Pablum.* The latter consists, rather, of porous flakes which, like sponges, drink up liquids. Hence Pablum can be entirely saturated by the digestive secretions. This is borne out by studies of Ross and Burrill who found that the starch of Pablum is more rapidly digested than that of ordinary cereals cooked 4 hours.

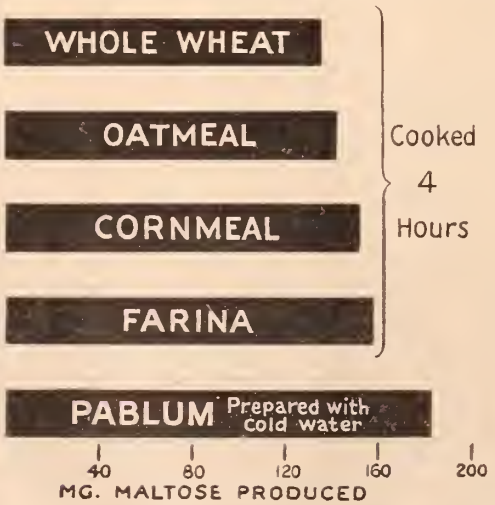


140 X STAINED (INSET) 290 X. STAINED

Large photomicrograph: Pablum mixed with cold water—portion of large flake. Pablum flakes are honeycombed with "pores" or air-spaces (note light areas). This porosity permits ready absorption of digestive fluids by the entire flake. No starch granules appear—they have been completely ruptured.

Inset: Farina cooked ½ hour—clump of tissue including starch granules. Note density of clump and lack of porosity. Many starch granules, such as are present in raw cereal, remain unchanged in form.

Table shows that maltose production is much greater for Pablum prepared with cold water than for other cereals cooked 4 hours. Ross and Burrill (J. Pediat., May 1934) conclude from this and from the total soluble carbohydrate formed that starch digestion of Pablum is more rapid than that of 6 other cereals.



BESIDES being thoroughly cooked and readily digestible, Pablum supplies essential vitamins and minerals, especially vitamins A, B, E, and G, and calcium, phosphorus, iron, and copper. It is a palatable cereal consisting of wheatmeal, oatmeal, cornmeal, wheat embryo, alfalfa leaf, beef bone, brewers' yeast, and salt.

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Vol. XVIII — AUGUST, 1934 — No. 8

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ADDRESS OF THE PRESIDENT

CHARLES F. MILLIGAN, M. D.

Clayton, New Mexico.

(Delivered before The New Mexico Medical Society, at its Fifty-Second Annual Meeting, at Las Vegas, N. M., July 19-21, 1934.)

We are convening in the fifty-second session of New Mexico medicine; and we are again meeting in the historic little city of Las Vegas where New Mexico medicine was organized. As we look back over that span of years we can appreciate only in a measure what a state medical society meant to those pioneer doctors

You will remember that railroads were not as numerous then as they are now. The only other means of transportation was by horseback or horse-drawn vehicles. Their roads were mere trails, in many places badly eroded by the action of wind and water. It was frequently necessary to travel for many miles in semi-arid districts where there was little or no water.

A doctor in Roswell told me that he came to a state meeting in Las Vegas in the late eighties. He and his wife left Roswell on the same train, she for Chicago and he for Las Vegas. He had to go from New Mexico into Texas, then back into New Mexico, then into Colorado and back into New Mexico before he could get here, and his wife arrived in Chicago several hours before he arrived in Los Vegas.

When I was a boy in my early 'teens I was the horse wrangler for my father who was the only practising physician in Baca County, Colorado, Morton County, Kansas, and Cimarron County, Oklahoma. Whenever my father was summoned by relay messenger on a long distance call it was my duty to ride out into the pasture and drive in a team of ponies and hitch them to a buggy. The messenger's horse was tied on the side and my father and the messenger were off at a good speed. They would drive from ten to twenty miles where they would be met by a relay, and so on until some forty or fifty miles had been covered. These and many other handicaps were commonplace occurrences, and yet they found time to travel these long distances and organize medical societies.

Since then we have invented the automobile and the airplane, we have built highways and telephone lines to the remote sections, but when one asks some doctor why he doesn't attend the medical meetings in our state, he will reply "it's too far away and I can't be away from home so long."

In this fifty-two years of time we have experienced some wonderful changes. During this period we have witnessed some of our greatest medical discoveries. It has been called an age of science, and it also has been an age of great things. We were not content with what we had but we tore down and built on a larger and grander scale. The medical profession built larger hospitals, developed specialties, built up clinics and great medical centers; and yet the physicians of fifty years ago possessed the same standards of character and professional devotion that we insist upon today, and the same standards that will be insisted upon fifty years hence.

With most people fifty years ago the doctor's opinion was infallible. What the doctor told his patient was true because the doctor said so. Today he is expected to prove his statements by scientific reasoning. This has been brought about by higher education; and in order to meet this demand it has been necessary for the doctor to keep well in the lead

in his scientific training. Fifty years ago most medical schools required for graduation from two to three courses of six months each. Today our schools require from three to four years of pre-medical work with four years of medicine and one year of hospital training; so that a medical education today requires considerable expenditure of time, energy and money. I believe that when one completes this course, if he hasn't built a foundation for medicine he certainly has no foundation for anything else. His training has been essentially medical. It is true that some men have left medicine to become eminently successsful in other lines, but they are the exception and not the rule. Dr. DeCosta said that most men who quit medicine went to the devil or to Congress. The old training leaves its mark. Certain beliefs are fixed so firmly that they become as intuitions. They feel, as did Dr. Holmes, who, though he had abandoned medicine for literature, cried out to the members of the profession, "Claim me, hold me, call me brother still."

After the completion of this medical training the average man requires an incubation period of a number of years before he can become self sustaining. It is said that Paget was in practice for ten years before he obtained a fee for a private operation. Agnew was in the fifties before he attained reasonable prosperity. A surgeon can continue to operate only so long as his hand is steady and his eye keen. As a rule, at the best, a surgeon has only twenty-five years in which to make and lay by enough to provide for his old age and the decent support of his family after his death. At any time during those twenty-five years his usefulness may be destroyed by inoculation with a disease or by a crippling injury of the hand. The period of remunerative work in operative surgery is probably shorter and more beset with perils than in any other profession. Members of other professions may go on indefinitely but not the surgeon.

Have we kept pace with our modern civilization? We hear from some quarters that we have not. We are told that we are costing the public too much money for the little good that we are doing. They quote statistics to prove to us that about ninety per cent of the sick would recover without the aid of medical science. They tell us that heart disease is on the increase, that we have not discovered the cause of cancer, and that tuberculosis is still the great white plague. They are trying, and in a measure they have succeeded, to arouse the public to do something against this so-called enormous cost of melical care.

These critics fail to take into consideration that there was never a great enterprise carried to completion without the aid of medical science. We could never have built the Panama Canal without the aid of modern medicine. We could never have converted swamps into habitable and tillable districts without modern medicine. Tropical cities were unsafe for white men until public health measures were put into effect. Only a few years back the American sailors going ashore at tropical ports were required to carry their food and water with them and it was a courtmartial offense to violate this order.

Who but the medical men have made the great discoveries and inventions of medicine? Who has borne the toil and the expense of medical education? Medicine is the most ancient of the professions; it is older than Christianity and more ancient than the civil law. And through all these years, regardless of race, of cast or creed its watchword has been "Service." It stands closer than any other calling to the secret of eternity, and watches death, ever busy with her shuttle, as she weaves her somber thread into the warp and woof of the affairs of men. It seeks to mitigate human suffering and to prolong human life. These have ever been its slogans, are still, and always will be; its cloud of smoke by day and its pillar of fire by night. .

The public does not want a reduction in medical standards, but it does want a reduction in medical fees and some one else to pay the bills. Some advocate that the greater part of this expense should be paid by taxation, so that the larger corporations should bear their part of this burden. Most medical men know that the corporations are not putting out anything. They always manage in some way to take it away from the employee or the consumer; and whenever public funds are involved, the politician usually controls them.

There is another group who advocate health insurance, but this plan entails considerable

administrative expense and it rapidly drifts into commercialism.

When the United States took control of Cuba at the close of the Spanish-American War a plan of health insurance for the Spanish populaiton of the Island was in operation. This seemed to be working very well, so other insurance groups were organized to include other inhabitants until the system became universal. I find in a recent report of the American Medical Association that the money of some of these associations was used to erect club houses and theaters instead of spending it on modern medical equipment; and that only the medical men who were directors in the association were receiving a salary as much as thirty-five hundred dollars per year. The doctors who were doing the work were working long hours for a salary of twenty-five dollars per month, and some of them were compelled to see as many as forty patients per hour. The better class of the medical profession struck, but they lost the strike because the better class of the people all belonged to the societies and there was no chance for private practice. People will stand for a lot of inconvenience and poor service if it does not cost them very much.

Our system in America is not so bad after all. During the depression thousands of people have gone hungry, ragged and cold, but not many people have suffered from lack of medical attention. The doctors have done their part. Why all this noise about the high cost of medical care when the public has not paid for it? I do not know of many people who have paid more for medical services than they were able to pay; but I know a lot of them who have not paid me what they **were** able to pay. Most people who are reasonably prosperous can raise from six hundred to a thousand dollars for an automobile almost any time. but if they pay half that sum to some group of doctors and a hospital to save their lives, they think that they have been robbed and they talk about it for the next ten years.

The medical profession of today is laboring under a great handicap; it is a house divided against itself. All over the country medical organization is greatly retarded by jealousies and petty personal grievances. We will not support a worthy cause for fear that our competitor will benefit from it. We refuse to take an active part in our local society because it is run by a clique that we do not like. We do not want the younger members of the profession to get control of the society because we want to keep them in subordination. The younger men want to control because they think that the older men have had their day and that they have no place in modern medicine.

Not long ago a doctor said to me: "So many of our doctors seem to have no conception of medical ethics. I do not believe that they teach ethics in the schools now." I am convinced that the trouble is not with the schools. When a young doctor locates in a community he finds the older members fighting one another with any weapons that may be at hand. He sees them attempting work far beyond their ability to perform. They do not give him a very cordial welcome. They leave him to work out his own salvation. They do not invite him to join the society, they prefer to wait to see how he is going to "line up." He hears that they are telling the public that he has had no experience and that it will be several years before he learns anything about medicine. Can you expect that fellow to "shoot square" in return for such treatment? Is it any wonder that he resorts to medical banditry? The quack is always ready to extend to him the hand of fellowship because he needs him in his business. He must make a living, he must pay his school debts. If the medical profession will not help him to go right, he can find plenty of help to induce him to go wrong.

We must have these young graduates if we are to maintain the high standards of medicine. They possess an education and a training that many of us did not get when we went through school. They can teach us the theory of modern medicine and we can show them its practical application. We are the doctors of today and they will be the doctors of tomorrow, and the standards of tomorrow will be greatly influenced by the instruction we give today.

You young men have enlisted under the banner of service, you have aspired to a noble calling, you have high ideals. In the course of your career you will meet with many discouragements. At times you may not possess

the necessities of life, you may be handicapped by disease; but do not lose sight of your ideals. If you possess the three qualifications of honesty, sobriety and energy you cannot fail.

You must remember that your medical education is the culmination of the experiences of your predecessors. You must also remember that the medical profession is now and always has been controlled and managed by men of maturity. They possess an experience which cannot be acquired from the college curriculum, but by years of study and practical application in their chosen line of work.

My advice to you is to read good books and magazines. Keep up with your post-graduate work, cultivate the acquaintance and friendship of worthwhile people, and your profession will be proud of you; and you shall have the crowning satisfaction in the knowledge that you have been a real service to your fellowmen.

The older members of the profession have blazed the trail and are pointing the way to the heights that you may attain. One by one they are falling by the wayside and shifting their burdens to you with the instructions, "Carry on, and be faithful to the trust."

Today, we honor the pioneers of New Mexico medicine. Their wives have kept the home fires burning. They have maintained the lonely night watches while their husbands were out on errands of mercy, sometimes on horseback in severe rain storms in summer and blizzards in winter, carrying on and hoping that some day their dreams would come true.

Their names will seldom appear in history. It has been said that history has no place, not even in its margin, for the school teacher nor the country doctor; but the history of a country is not made up from its wars nor its political changes, but by more subtle influences which shape the destinies of its people. When the final chapter of the history of New Mexico is written, the principal character in that great drama will be, not the soldier nor the trader, but the pioneer doctor. In that final achievement of the white man in his endless march toward the setting sun, the winning of the West, three symbols will dominate, the rifle, the plow and the saddle bag, and the greatest of these is the saddle bag.

TEMPERATURE IN VACCINE THERAPY AND BIOLOGICALS.

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(Read before the El Paso County Medical Society.)

There is a right way and a wrong way to do everything.

From Elements of Biologicals, by Bosanquet and Eyre, in their book on Serums, Vaccines, and Toxins, Third Edition, we find, "While sufficient accurate observations are lacking on potency of vaccines, it is usually thought that with few exceptions (in the case of those bacteria in regard to which immunity depends partly upon the elaboration of lysins) vaccine may be used with confidence for a considerable period of time. Antibodies have been produced in good quantities with typhoid vaccines one and a half and two years old. They should be kept in a cool dark place."

It is to be brought out in this paper that vaccine therapy and biological dosage differ according to their potency, which depends on: (1) process of manufacturing in laboratory, (2) strength or number of bacteria contained, (3) temperature 45°F. to 50°F. or its resulting precipitation and agitation at room temperature, (4) end clinical results.

We will assume you have the right technician to make your vaccine. The process in laboratory production of vaccines is an intricate procedure when rightly carried out, although the bacteria may be killed by heat or chemical means. From your clinical experience you will confer with your technician on the number of bacteria per cubic centimeter to be contained in your vaccine.

Heat and cold precipitate and agitate solutions and also change hormones—or whatever you wish to call the agent you expect to use in your vaccine. In the chemical, serological, biological, or vaccine laboratory, heat and cold play an important part in the end results of what you are trying to do. It is an error committed by the room-temperature advocates that they do not use an autoclave and have a scientific laboratory and clinical basis to sustain their contention. The National Institute

of Health have not, evidently, considered scientifically the worth of temperature in its effect on vaccine. This can only be tested out in the clinic by comparison, variable room temperature vaccines versus 45°F. to 50°F. vaccine temperatures as advocated in this paper. My experience in private and clinic practice for twenty years, engenders the opinion that the potency of vaccine or biologicals, if 1 and 2 of paragraph 2 are correct, depends on temperature, when the technic is to be considered, between the laboratory and the patient.

Ludwig Hecktoen's 1929 questionnaire in a vaccine survey to 1261 physicians, on their favor or disfavor of vaccine therapy, gave only seventeen as favoring the use of vaccine. Assuming that vaccine therapy has what they thought a fair trial, the majority who voted against its use were surely wrong in their deductions on end results as not reliable, if they ignored the 45°F. temperature being maintained constantly from the manufacturers to the doctor's syringe, as given in this constructive criticism on temperature in vaccine therapy and biologicals.

I take it that the profession have gone sour on vaccine therapy because (1) the change from autogenous specific strains to stock vaccines brought loss of confidence, although stock is instantly available while autogenous takes time to make; (2) wrong method of specific selection; (3) temperature of vaccine too variable, it should be constant; (4) massive dosage as advocated by Wright for prophylaxis and the same large dosage in acute infections where you wish desensitization in an already infected person, instead of small doses and often.

In autogenous laboratory-made vaccines—which took time, money, apparatus and knowledge to prepare—there was much theory and practice to follow, but the individual strains of bacteria in the autogenous vaccine gave certain results. Time and price were something to be considered, so stock vaccine was started by Mathews in 1908, and the downfall of vaccine therapy immediately began, for reasons before stated.

Temperature was unconsciously kept nearer 45°F. during the early autogenous-vaccine time, than afterwards with the stock vaccine, because the doctors were more closely connected with the laboratories producing the autogenous and where the doctor was uninformed concerning its potency, the laboratory technician was more apt to give advice about standardization methods of treating the autogenous to preserve its potency, than the uninformed druggist, whose chief concern is sales of stock vaccine. Likewise, the druggist may have ice in his refrigerator or a good constant ice-box at 45°F. all of the time; but what happens when he cleans or de-ices the box, especially if the worker is slow and the weather hot? Again, when the druggist receives an order for vaccines to be sent to the doctor, many times other articles are included in the order, this drug clerk for the first time breaks the chain by a variable temperature enroute, whereas the vaccine should be conveyed in a thermos bottle which, when not in use, is always kept open in the ice-box. In this way and only in this way can the doctor receive a standardized potent vaccine which has been kept at 45°F. from manufacturer to doctor. Unless this constant temperature is maintained, clinical results will be disappointing and unreliable, and this disappointed doctor will join the other vaccine nihilists in time.

Inquiries from our El Paso wholesale druggists, returned the information that manufacturers are not consistent in maintaining a standardized temperature in their shipments to them. Winter months there is not so much loss; but shipments received in El Paso during the summer months, by our local wholesale druggists, are in containers that are not temperature-resistant; hence, impotent vaccines and biologicals. Who knows where the packages will be placed while enroute—by a door, a radiator, or a window, to absorb heat or cold.

The doctor should have the same technic as the druggist for constant temperature, if he has a visit to make and vacccine to give. Reach in his refrigerator for an open thermos bottle, place inside the bottle the vaccine to be used, screw on the top of bottle, and he will have a potent agent to use at the bedside. Convey his vaccine back to the refrigerator in this same manner, and the temperature changes should not be more than 5° difference if this doctor has not been too dilatory in returning his vaccines to thermos bottle after filling his syringe. This syringe should be normal temperature. When in office work and it is possible, take the syringe to the ice box to fill with vaccine,

rather than the vaccine to the table to fill and possibly result in higher temperature; if for many injections, use thermos bottle on table, as if on bedside visits.

The United States Army have a general order that smallpox vaccine be kept continually at a temperature of 45°F.; but if they fail in technic and allow their smallpox vaccine to go above 55°F., who knows positively whether this vaccine is potent or impotent? I am of the opinion that many a smallpox vaccination gives negative results because of faulty temperature technic where the vaccine point has been used too warm.

According to Walter E. King, M. D., of Parke Davis Company, Research and Biological Laboratories, in a letter dated December 6, 1933: "It has been observed that Pertussis Vaccine should be constantly stored in the refrigerator and that under such conditions Pertussis Vaccine is advantageous as compared with the same vaccine kept at room temperature." Possibly the cause of this potency being lost is the precipitation and agitation of the vaccines from variable temperatures from a South Dakota room of 10° below to an Arizona room temperature registering 115°F. above. We must have a point to tie to if we wish constant and positive clinical results, else our end results will fail in the final check up.

We have not been able to find in any published article mention made of a standardized temperature to be kept continually from the manufacturer to the doctor's syringe, as herein advocated. The majority, if not all of the writers on vaccine therapy, do not mention temperature of vaccines.

In gonococcic infections, you do not get a lasting immunity and no permanent sensitization involved; hence, the accuracy of the vaccine test as an example on temperature end results in vaccine therapy. Pearson, quoted by Kolmer, in Infections, Immunity, and Biological Therapy, out of one hundred cases had ninety-six positive results from the following: Massage seminal vesicles, prostate and Cowper's glands, to liberate any toxins after giving a massive dose of gonococcus vaccine as a provocative measure. The patient was told to hold the urine from midnight until the next morning, when he took a smear from a centrifuged specimen. This was continued for four days, altogether, four smears. Inasmuch as temperature is not mentioned and undoubtedly not considered, it was the probable reason for the four failures.

Referring again to Bosanquet and Eyre: "The administration of a large dose of gonococcus vaccine in a doubtful case or one showing signs of active inflammation, is followed by a febrile reaction in 96 per cent of positive cases and by a local reaction in 82 per cent." Bosanquet and Eyre commend this procedure in settling the question as to whether a patient who has suffered from gonorrhea should be permitted to marry. In all probability these failures were due to the non-consideration of temperature-neglect of their vaccine.

Kohler, on "Vaccine Diagnosis of Gonorrhea," reported intracutaneous injections of 0.15 cc. gonorheal vaccines containing from 3 to 10 billion killed organism per cc. According to his observation, reactions which appeared and lasted for a period of more than 24 hours seemed to him to be specific in the diagnosis of gonorrhea either in the acute or chronic stage. As the Germans are very thorough in their technic and he reports no failures, I take it that he consciously or unconsciously employed the before-mentioned temperature technic.

CASE 1. Mr. S., aged 24, in appearance healthy. Wished to get married and wanted positive evidence that a G. C. infection six years before had left him cured ready for the marriage stage. Four glass urine specimens, clear, all four. Meatus dry. One cc. of G. C. 45°F. vaccine injected subcutaneously brought no reaction after 24 hours. Patient discharged cured, no infection and in the ten years interim nothing has shown up although marriage was consummated.

CASE 2. Mr. B., aged 24. American, married, wife complaining of certain vaginal symptoms, came to office and wished test and advice, having heard of Case 1. Prostatic examination, patulous; previous infection denied. Four glassed urine tests: first glass full of shreds, meatus dry. One cc. of 45°F. temperature G. C. vaccine subcutaneously produced an anaphylaxis with accompanying symptoms of anxiety, fever, headache, trembling, aching, and didn't care if he died, but was certain he would never take another test shot. The skin reaction redness was more than pink and appeared in less than ten hours and did not fade away for more than 48 hours. The patient returned and was told that he had remains of an old g. c. infection. Patient was trapped into the acknowledgement that six years before he had taken a course of treatment as generally was given for g. c. infections, because he had heard that someone going with his

girl had a g. c. infection. Inasmuch as this case had been caught "with the goods" and did not wish to assume the responsibility, he did not take treatment; but the wife did, and in her case smears were positive, as well as the vaccine test.

Do not expect good results from your vaccines or other biologicals when taken from a warm satchel, shelf, or table, into a warm syringe, as you will be disappointed either in your diagnosis or your treatment.

COLLAPSE THERAPY IN PULMONARY TUBERCULOSIS

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(Read before the Forty-Third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7 to 9, 1934.)

In dealing with the management of pulmonary tuberculosis, the time-worn subject of early diagnosis is of too great importance to pass without mentioning. The present high death rate in tuberculosis is largely dependent upon two factors; first, failure to make the correct diagnosis while the condition still has a favorable prognosis; and second, failure to use the methods of treatment which will, when used properly, offer the best chance for cure and at the same time markedly shorten the length of convalescence.

Failure to make a diagnosis early is not necessarily incompetence on the part of the attending physician. Often the patient does not consult a doctor until the early stage is passed. Sometimes the internist sees only infrequent cases of tuberculosis and consequently is not always tuberculosis-minded. Then, too, there are moderately advanced cases with indefinite symptoms and obscure physical signs, in which the x-ray film alone will tell the true story. It is probably conceded by all phthisiologists that the x-ray is today the greatest single guide in the detection and management of cases of pulmonary tuberculosis. The physician should always and forever be looking for early tuberculous lesions, and, without exception, any and every patient presenting himself with either a history or physical signs, or both, in any way suggesting tuberculosis, should have an x-ray of the lungs.

It is not within the scope of this paper to go into the signs and symptoms of tuberculosis; however, we want to invite your attention to two facts: first, not all tuberculosis begins insidiously and progresses as a chronic disease; and, second, not all insidious or chronic pulmonary lesions are tuberculous. Accurate, differential diagnosis is necessary.

Not infrequently, tuberculosis begins with symptoms of an acute illness, and often is mistaken for lobar pneumonia. In fact, it may be a tuberculous pneumonia, and have all the signs and symptoms of a pneumococcic or streptococcic disease. If it be a tuberculous process, however, it will not clear up so rapidly nor so completely as a pneumococcic pneumonia; therefore, every patient having a slowly resolving pneumonia with a continued productive cough and a low-grade temperature after the acute symptoms have subsided, should have not one, but many, sputum examinations for tubercle bacilli, and an x-ray of the chest.

More frequently than this, there is a type of tuberculosis which begins acutely but less dramatically and is erroneously called influenza, cold in the chest, or bronchitis. Here, also, it is our conviction that every patient with these symptoms which fail to clear up as readily as we are justified in expecting, should also have the same careful examination.

If these procedures are followed, and a careful differential diagnosis is made, a large number of patients will be spared much suffering, and often unnecessary deaths will be prevented.

Furthermore, a patient who has had a pulmonary hemorrhage and, after a few days' rest in bed, is returned to work without an x-ray of the chest, has been grossly mistreated. Yet such a gross omission as this is no greater than relying on bed-rest over an indefinite period of time without consideration as to the need of local rest; by local rest we mean some form of collapse therapy.

The clinical material which serves as a basis for this paper is drawn from a private group practice of many years in a community which is a Mecca for tuberculous patients, and from the Southern Pacific Tuberculosis Sanatorium,

a hundred-bed institution located in Tucson. In this institution and in our private practice, strictest bed rest is enforced, but it is not relied upon solely.

In this Sanatorium we have an average of 70 to 80 per cent of our patients under some form of collapse therapy, and at intervals that percentage has risen above 80 per cent. It is often used in those patients who appear hopeless at the start, and we have frequently benefited patients and sometimes even secured an arrested disease in patients whose outcome, without such help, would be fatal.

Collapse therapy in all types of pulmonary tuberculosis is the greatest boon that has come to the tuberculous patient since the principles of bed-rest and good food were generally accepted as fundamental in the treatment of this disease. It is our serious conviction that, in certain cases of pulmonary tuberculosis, particularly those with cavities, collapse therapy is just as much indicated as surgery is in acute appendicitis; because, without this, the hope of ultimate cure is greatly lessened. The absence of acute symptoms and the tragic demise of the patient make us none the less responsible than if we were to permit a patient with an acute appendicitis to go without surgery.

There are many beautiful stories of early recoveries from bed-rest alone. We have all seen them. No one is more convinced than we are that complete bed-rest is the fundamental and the most essential principle in the treatment of this disease but our purpose is to show that it should not be depended upon solely. Very little has been said by the advocates of bed-rest without collapse therapy, of those patients who have extensions in the same and in the contralateral lung, as well as in other organs, while the patient is at rest in bed. Neither do they write about those who have cavities form and those who have hemorrhages from these cavities. We hear no one taking credit for the case with an open cavity who, because of a continued positive sputum, is a menace to every one with whom he is contact. We hear little of the patient who, by waiting for bed-rest to cure him, has had pleural adhesions form and has, therefore, lost forever his opportunity for a successful pneumothorax.

The different forms of collapse therapy will be enumerated in the order of the frequency of their use in our hands: (1) pneumothorax, (2) phrenic interruption, temporary and permanent, (3) intrapleural pneumonolysis, (4) thoracoplasty, partial and complete, (5) scalenotomy, (6) extrapleural pneumonolysis, (7) oleothorax, (8) intercostal neurectomy.

These procedures can be used separately, collectively, or successively. We want here to advocate and emphasize the principle of using them as successive steps until cavities have been collapsed, and the patient has been rendered free of sputum and bacilli. In other words, we feel that the only way that the best interest of the patient can be served is to start the use of collapse therapy with one object in view—placing the disease process at rest, even if all of these procedures are required. If the first procedure is not successful in accomplishing this, then an additional one or more of these methods is to be used in conjunction with it, or as a subsequent procedure, until absolute collapse with arrest of the disease has occurred.

We feel that the use of collapse early in the disease is often overlooked. Many men are coming more and more to look upon collapse as a valuable adjunct in the treatment of tuberculosis, but too often they use it as a last resort. So often, the waiting is the one thing that changes a patient from a hopeful to a hopeless case. One should always have in mind those dangers of delay which have been pointed out earlier in this paper.

Our methods of procedure of studying and handling patients can best be illustrated by following a patient into the Southern Pacific Sanatorium. When a patient enters this institution and when his history, physical examination, laboratory studies, and x-ray films are completed, his case is presented before the Staff. Depending upon the duration of the disease, the amount of involvement, the location of the lesions, the amount of previous rest he has had, and how he has reacted to it, the decision is made as to what therapeutic measures will be instituted at this time.

If the disease is of short duration, minimal in character, and the patient has had no previous rest, he may be put on complete bed-rest for a period of thirty to sixty days, when he is studied again. Then, if there is not ample evidence that there is a retrogression of the le-

sion, immediately help is given him by some form of collapse therapy. On the other hand, if the disease is more advanced, if he has had a previous period of bed-rest with evidence of a progressing disease process, especially if he has an open cavity, then we immediately begin to supplement his bed-rest with collapse therapy. We consider an open cavity is always a menace to the patient, and the patient who has a cavity remaining open is always regarded as being in jeopardy, regardless of size or type of cavity. Consequently, in cavity cases, collapse in some form is always undertaken at once. The classification of cavities as brought out by Pinner in 1928 is used as a guide in treatment.

PNEUMOTHORAX

Pneumothorax is usually the first thought in collapse therapy and is indicated wherever the disease is sufficiently advanced to justify collapse therapy. The selective, or more properly an ideal pneumothorax, is that which collapses the diseased area only and allows the healthy lung to continue to function; in early cases, it is the one which is most desirable.

At the present time there are ample figures to prove that, in collapse by pneumothorax, for instance, the cures are in direct proportion to the amount of collapse the patient receives. Therefore, where, on account of adhesions, a complete collapse is impossible, a Jacobeus operation or some other method should be used to cut the adhesions; if this is impractical a phrenic interruption may be effective. It is a deplorable fact that many cases of unilateral pneumothorax with a good contralateral lung, where only partial collapse has been obtained, have been and are being kept up without any other procedures being instituted, while the patient with his open cavity progresses gradually until death. This is also true of phrenic interruption.

Pneumothorax has the advantages that it can be continued either unilaterally or bilaterally, or discontinued on one or both sides when the symptoms indicate the necessity.

Contrary to the once popular opinion, the use of pneumothorax in bilateral tuberculosis does not necessarily aggravate the condition in the contralateral lung. More often, a good collapse of the lung with the more advanced lesion, by a diminution in the general toxicity and probably a transference of pressure through the mediastinum, allows the opposite lung to improve. This is so commonly seen that we do not feel that bilateral lesions constitute a contra-indication to pneumothorax, but rather an added indication. Furthermore, in cases with bilateral disease when the better lung fails to improve, while its opposite has been collapsed by pneumothorax, we have no hesitancy in instituting pneumothorax bilaterally, or doing a phrenic interruption on the side with the better lung. Vital capacity studies are important in such cases.

Pneumothorax, when it accomplishes complete collapse, is successful in producing a cure in about 80 per cent of the cases of unilateral involvement, and a smaller percentage in bilateral disease.

A difficult problem for decision is the length of time pneumothorax should be continued. Usually the patient is loathe to give up the thing which he feels has saved his life—the attending physician is usually in accord with him. The decision is made by consideration of the pathology that was present when the pneumothorax was instituted and the present x-ray appearance of the lung. In general, we may assume that a successful pneumothorax will have accomplished its purpose in two to two and a half years, if type 1 or 2 cavity was present at time of its induction, and sooner if there was no cavity. Furthermore, the compressed lung is capable of expanding and resuming its function in most cases which are not collapsed for longer periods.

COMPLICATIONS

There are two serious complications to pneumothorax: (1) spontaneous collapse, and (2) development of an effusion which may later become purulent. The spontaneous collapse is always looked upon as serious. Some may survive without any interference—we had one patient who had three separate spontaneous collapses. It never became necessary to interfere on any occasion, and he is well today. This is the exception. More often the air must be aspirated, and, if this is not sufficient, a small catheter is introduced, over the outer end of which is fastened a condom with a small slit in the end. This acts as a valve, allowing air to escape but not to return.

Fluid develops frequently—more often when a complete collapse is prevented by adhesions and when positive intrapleural pressures are used. It is our practice to aspirate the fluid

when it forms. We feel that the risk to the patient is greater in leaving it than in withdrawing it.

PHRENIC NERVE INTERRUPTION

Recently there has been considerable unfavorable criticism of phrenic nerve interruption. This criticism grew out of the fact that all of the original operations caused permanent paralysis of the diaphragm. We agree with these objections. However, we avoid the unfavorable results of a permanent paralysis by doing a temporary nerve interruption, devised by Goetz, advocated and popularized in this country by Dr. John Alexander. The paralysis of the hemidiaphragm, when the operation is performed in this manner, persists four to nine months, when the function gradually returns. When the diaphragm begins to function again, and if the patient still needs the benefit of its paralysis, a second similar operation may be performed easily. In some patients we have repeated it the third time and have a diaphragm which is capable of ultimately resuming its function.

We find the use of phrenic nerve interruption is as important in conjunction with other measures as it is when used independently. Many an unsatisfactory collapse by pneumothorax can be converted into a satisfactory measure by the use of this minor operation. This is especially true in those cases with adhesions to the diaphragm. The relaxation obtained will often allow a cavity to be collapsed by the pneumothorax, which, before the paralysis of the diaphragm, was continuously pulled open by every cough and respiratory movement. It is a matter of frequent observation that, by the use of a combination of these methods, additional beneficial results may be accomplished amounting to 25 to 35 per cent of the heretofore unsuccessful cases.

Temporary phrenic interruption is used on a patient who has had a successful pneumothorax long enough and the lung is going to be permitted to re-expand. Thus the once diseased lung is protected from full function for several months longer.

Phrenic interruption has another important function as preliminary to complete thoracoplasty. Its use here is to test the contralateral lung, and, too, a high rise of the diaphragm may make it unnecessary to remove as many ribs as would otherwise be necessary.

OLEOTHORAX

Oleothorax is a valuable supplement to pneumothorax, and has a distinct place in collapse therapy. It is not uncommon to note that often, with the continued use of pneumothorax, particularly where only partial collapse has been obtained as a result of adhesive pleuritis, the pneumothorax space becomes reduced. This indicates that the collapse is soon to be lost through this process. The collapse can frequently be maintained for an indefinite period of time by displacing the air with oil. This procedure is adapted only to those cases having the lower part of the lung adherent to the pleura and chest wall; this prevents the oil from resting on the diaphragm.

The preparation with which we have had the greatest success is ordinary Wesson oil. This causes but little, if any, reaction, and prevents by its weight further reduction of the pleural space. Our experience with Gomenal or other antiseptic oils has been most unsatisfactory.

SCALENOTOMY

Scalenotomy is used in moderately advanced apical tuberculosis, usually in conjunction with phrenic nerve interruption, with the hope of effecting a cure by this minor operation and avoiding the more formidable procedures. It adds additional rest to the apex by relaxation and also affords some restriction of motion of the upper three ribs.

This procedure probably has not been as widely used as it should have been, especially in the earlier cases. Our experience with it has been most satisfactory.

EXTERNAL PNEUMONOLYSIS

External pneumonolysis, while not as popular as the other procedure, certainly has its place, particularly in the very sick patients who have not yielded to the less drastic measures and where there are specific contraindications to thoracoplasty. In this type of cases, it is indicated: (1) in a single, small, apical cavity with a good contralateral lung; (2) with involved contralateral lung, or bilateral, apical cavities; (3) in some cases of posterior thoracoplasty where the cavity has not been successfully closed.

Materials used in this procedure are muscle, fat, gauze, rubber dam, and paraffin.

Complications to be considered in this procedure are (1) rupture of external cavity wall

during operation, with infection of pleural space and resultant empyema; (2) interference with cardiac function due to excess pressure, (3) where paraffin is used, perforation of wax through cavity wall into a bronchus, with extrusion of wax.

INTERCOSTAL NEURECTOMY

Intercostal neurectomy has more limited use in collapse therapy than other measures. Its field of greatest usefulness is in those patients in whom the other minor procedures have failed to effect an arrest and whose present condition contra-indicates thoracoplasty. It is used with the hope of the patient improving to such a point that he may be a suitable risk for thoracoplasty.

THORACOPLASTY

If all other measures fail to accomplish the desired result, or if the case is such that it is obvious that other procedures can but cause a waste of time, we resort to an extrapleural thoracoplasty, either partial or complete, or one that is bilateral and partial. The details of this procedure will be omitted. Suffice it to say, many cures have been effected by virtue of thoracoplasty which would, with anything less radical, certainly, surely, and fairly rapidly, have resulted in death.

The attitude of patients regarding these measures is significant. Very frequently we have patients who ask when they will get their collapse procedure started and even get impatient because it is not done immediately. This is especially true in the Southern Pacific Sanatorium where there is always a large percentage of patients under collapse therapy. Furthermore, even though looked upon as radical by many, it is not uncommon to have patients come to us of their own volition to ask if they are suited for thoracoplasty.

In closing, I want to emphasize again the opening thoughts. Two factors are largely responsible for tuberculosis being of such tremendous importance—first, failure to make the correct diagnosis while the prognosis is good, and while cure may be effected with a minimal morbidity; second, failure to use the methods of treatment which will offer the best, the surest, and the quickest prospects for a cure.

SUMMARY

1. The importance of early diagnosis of pulmonary tuberculosis is discussed.

2. The necessity of collapse therapy in addition to routine bed-rest is emphasized.

3. The importance of using the methods of collapse individually, collectively, and successively, is stressed.

.4 The various surgical methods used, with their indications, contra-indications, and complications, are discussed.

DISCUSSION OF PAPER OF DR. O. H. BROWN ON "FOOD ALLERGY"

DR. G. WERLEY, (El Paso), Opening Discussion: Dr. Brown has been a life time student of this subject, and I do not feel like talking allergy in his presence. Allergy stands next to infection as a cause of human disability and disabling symptoms. The main difference in the pathology of allergy and infection is that in infection you have a living cause and permanent damage. Allergy starts in the same way but you do not have suppuration, and as a rule no pathological lesions remain after the attack is over. But, on account of the pathological swelling, as in the appendix for example, you will have the same symptoms, colic, pain, tenderness, and so forth. Allergy simulates organic disease and surgical conditions very closely, and you may see an abdomen with three or four scars, from which organs have been removed, and the patient is in the same condition as before. You can do something for these by taking up the matter of food allergy with them. Many people seem to think that food cannot do any harm. It was made by the Creator for man and cannot harm him. I do not think that fish was made for man to eat any more than man was made for fish to eat. The business of putting food into the stomach is not a simple thing; if the stomach could speak, it would have many complaints against the food given it. When allergy and infection exist together, the relief of the allergy will help the infection. Taking off the load some place is important in sickness of any kind. Often relieving the allergy will permit the machine to function normally again. I am not discussing the paper except to commend it. In taking food histories, general questions are not sufficient. You have to be more definite and specific, and you will finally get the truth about the things the patient would not otherwise think of. Ask about acute indigestion or ptomaine poisoning, and they will reply "I ate fish (or strawberries) and nearly died."

I have been trying to do some work on allergy in connection with heart disease. I have found difficulty in giving relief to angina and painful conditions of the heart; have used nearly all the drugs available. Then I became interested in allergy in connection with heart ailments, and have

record of some hundred cases of one type or another with good histories in which 90 or 95 per cent will give history of allergy. Have tested about fifty cases and got reactions to one or more allergins, some to very many.

One illustrative case was a man about forty years old, who has an attack of angina every morning when starting his car. He has taken all the usual drugs. When skin tested he reacted to more than twenty allergens. His wife cooperated and eliminated the reacting foods, and he has not had an attack since.

A woman, age 26 or 27, from the Mormon colony in Mexico. Had so much angina could not sweep the floor, make bread or do any house work. Was given drugs but without effect. I tested her and found her sensitive to a few foods; among them was fish which she had been eating freely. This was stopped and she can do her work without angina except after great exertion. Simply taking the load off her heart was effective.

We are taught that we get over allergy as we get older. A lady of 72, who had never had angina before, developed the condition. Put her on the elimination diet of Rowe, or the addition diet of Brown. Working along that line, she lost weight, and instead of having an attack every time she ate anything, she was practically free. Paroxysmal tachycardia comes in the allergy group.

DR. K. D. LYNCH (El Paso): Why do genito-urinary patients develop allergy at a certain time of life when they have not been having it before? Allergy patients can usually be divided into those who have allergy early in life and those who develop it later. The treatment must not slight the allied organic conditions, and in genito-urinary conditions there is an allied organic disease. In genito-urinary cases with severe migraine headaches, dilating the ureters will frequently give results. A patient may have hives in the bladder and the constriction of ureteral orifices must be taken care of.

DR. W. WAITE (El Paso): As chairman of the Program Committee, I want to thank Dr. Brown for presenting this subject which opens such a large field for discussion.

DR. L. O. DUTTON (El Paso): I wish to express appreciation to Dr. Brown for covering the literature and trying to bring out the important points as the foundation for this symposium. Those interested in this subject know how great a job it is to read the mass of literature. Dr. Brown has accomplished a great work for the Association, showing familarity with the subject and his contribution should make the remaining papers on the program more worth while.

DR. H. A. MILLER (Clovis, N. M.): Dr. Brown has given us a very practical paper, covering the general subject of allergy. We should think of the cell as a unit of structure in the body. The processes going on in the differentiated cell constitute the organism. Dr. Brown did not touch on the mineral balance of the cell, nor mention vitamins. Most of the chronic diseases can be treated by dietary methods, maintaining the proper balance of proteins, carbohydrates, fats, minerals and vitamins.

DR. R. D. KENNEDY (Globe, Ariz.): I have enjoyed this paper very much, and realize that this is a big subject and one which has not yet been mastered. I know that I have probably taken out allergic appendices. If a patient has all the symptoms of acute appendicitis and we cut in the abdomen, find the appendix edematous and the whole cecal region injected, how can we distinguish between an allergic condition and inflammatory one?

DR. J. M. MEASON (Chandler, Ariz.): I have been rubbing shoulders with Dr. Brown for some time, belong to the same societies with him and appreciate the work he has been hammering into us for years. I want to tell about one patient who was distressed with asthma. When questioned about her diet, she said she had been on milk for years. There were no pollens flying at the time. We wired her physician (Hastings) for a list of her food tests. Among them was Klim. She could not take citrus fruit. I wired her physician if he had tested her against raw milk; he replied "Klim is milk." Without consulting him further, we treated the patient who was on morphine and adrenalin for relief. We asked her to leave off the milk for 24 hours, and she consented to sleep without narcotics. After 48 hours we put her back on pasteurized milk and found she could take it, but she could not take raw milk.

DR. FRANK STOVALL (Sherman, N. M.): I appreciated the paper very much; it seems to be perfectly rational. I have one question; in angioneurotic edema, in which you get throat and tongue involvement, we cannot wait for the starvation method; what is the most active remedy for the immediate danger?

DR. O. H. BROWN (Closing): I agree with practically everything that has been said, except personal references. With regard to patients with angioneurotic edema, if patient is going to strangle, put in a tube; if not so severe, do not give anything for 24 hours except water. If the appendix is found swollen and looks as if it were going to rupture, it should come out whether it is allergic or inflammatory, because an allergic appendix can rupture.

One important thing in diagnosis, likely to be overlooked, is the history. The mere fact that allergy is in the family may not mean that this patient is allergic, and on the other hand it may be important. I found only one reference to angioneurotic edema in the literature reviewed, but do think it is important. Am glad that Dr. Werley mention tobacco; I have quit smoking since reading Sulzberger's paper. Many cases of spasm of the coronary vessels are aggravated by tobacco, but food is far more important. However, eliminating foods will not cure sclerosis of the coronary vessels. Organic disease may be aggravated by allergy and vice versa.

In treatment, one point which I have previously mentioned is that after a person has been taken off the food or foods causing the trouble, in a short time he can go back and eat that food. I was greatly astonished to find the amount of argument that gastric ulcer is allergic. I have had a leaning in that direction, and often put ulcer patients on acid and they do well. I am glad that vitamins was mentioned. There is much in the literature about the importance of supplying them. The allergic individual may lack something which he needs. I have had some results which lead me to believe there is some truth in that statement.

PUBLIC HEALTH NOTES

J. ROSLYN EARP, DR. P. H.
Director, New Mexico State Bureau of Public Health.

OUR UNTREATED SYPHILIS

Dr. Walter Clarke's most entertaining story of his adventures in Mora County has already appeared in the Annals of Internal Medicine.[1] His report on the survey of syphilitic infection in New Mexico will have been discussed by the New Mexico Medical Society before these notes appear in print. But the findings are of such importance to the future health of this state, and indeed of the Southwest, that some of them may well be recorded here.

The main problem, writes Doctor Clarke, is clearly indicated. It lies in the fact that less than one case in twenty is under medical care.

This rather startling conclusion is not based on guess work but on two pieces of investigation. The first was a census of all cases under medical care on December 1, 1933. This census was made by the U. S. Public Health Service in cooperation with the New Mexico Bureau of Public Health and the American Social Hygiene Association. The method followed a standard procedure under which census has now been made of about one-quarter of the population of the whole country. Reports were received from 350 physicians or institutions in the state; only 46 failed to reply. On the given day 1,831 cases of venereal disease (1,011 syphilis, 820 gonorrhea) were under medical supervision. Of these, 87.2 per cent were in the hands of physicians and 12.8 per cent in the hands of hospitals or other institutions. Taking the figures for syphilis alone it will be seen that 0.24 per cent of the population are under treatment for this disease.

The prevalence of syphilis is determined by three separate surveys, although the survey personnel was not entirely changed for any of them. In Mora County, Doctor Clarke found that out of 1,646 blood specimenss 5.8 per cent gave a positive Wassermann reaction. Among 1,452 individuals examined during the health survey, the average incidence was 8.0 per cent positive Wassermanns. In a third survey, made possible through the FERA, there were 87 positives among 2,214 specimens, giving an incidence of 3.9 per cent.

The high incidence of the health survey is due to the inclusion of two cities in the area surveyed. The low incidence of the FERA survey is due to the fact that it was made in such rural areas as Harding and Catron counties where the population is very widely scattered. Taken all together these three surveys give, it is believed, a very fair sample of the state and the average incidence of syphilis works out at 5.6 per cent.

Doctor Clarke made a detailed study of the records in the state bacteriological laboratory for 1932. Of 1,994 specimens sent in for Wassermann test by all private practitioners and health officers, 1,078, or more than 50 per cent, were sent by only 25 active, interested practitioners. Ten out of the thirty-one county health officers had not sent in a single specimen. Of 252 specimens sent in by 21 health officers, more than half were sent in by six men. No specimens whatever were received from any practitioner in four counties. These four counties had between them a total white population of 22,500. On the basis of our findings above there should be well over 1,000 cases of syphilis in these four counties.

Doctor Clarke concludes that "neither the physician nor the county health officers of the state are using the diagnostic facilities of the state laboratory as fully as they should." Doctor Clarke further recommends that specimens of chancre fluids for darkfield examinations should be taken and sent to the state laboratory. The state laboratory obtained outfits for taking these specimens and it was announced nearly two years ago that this service was available.* I am informed, however, that the physicians of the state have not availed themselves of this offer.

What can we do to remedy the unsatisfactory state of things disclosed by Doctor

Clarke's report? The U. S. Public Health Service has offered to lend us a full-time officer of the Service to improve our machinery for the diagnosis and treatment of venereal diseases in New Mexico and to take charge of popular health education with a view to convincing the public of the importance of consulting a physician in regard to venereal infection. They ask only that the state shall insure the necessary travel expenses and clerical aid and the availability of the necessary drugs. The offer will be presented to the next session of New Mexico's legislature. It is most earnestly to be hoped that it will be sympathetically received.

It has been clearly understood between the Service and the State Bureau of Public Health that any system for improving the diagnosis and treatment of venereal diseases in the state will be worked out in collaboration with the State Medical Society.

1. Clarke, W., Sangre Impura in Mora. Ann. of Int. Med. 7:1436 (May) 1934.

* See Southwestern Medicine, October, 1932.

CASE REPORT

Man Who Swallows Foreign Bodies.

ELLIOTT C. PRENTISS, M. D.,
and W. W. WAITE, M. D.
El Paso, Texas.

(Reported to the El Paso County Medical Society on April 9, 1934.)

The case is that of a young white man who was serving out a fine in the El Paso City jail. Beginning Nov. 2, 1932, he received considerable publicity in the newspapers on account of eating numerous electric light bulbs, razor blades, cartridges, bolts, and so forth. As this seemed to us to be very interesting from a medical standpoint, Dr. Waite called up the jail to see if the man would mind coming to Dr. Waite's office for a medical and x-ray examination. This he did on November 5. This record was taken hurriedly, and is not complete.

Mr. R. E. S., white, single, age 30, painter. Was born and raised in a New York slum. As a child did not have worms. Never ate dirt or clay. Pneumonia 15 years ago. Flu during the war. Never had lead poisoning. Has been eating nails, tacks, and so forth, since 7 years of age. Does not know why he ever began to eat foreign bodies; now does it more or less because he likes to do it. The publicity attached to it is probably the determining factor. He has had previous examinations by physicians in New Orleans (5 years ago), and in a hospital in Leesville, La. Has been in vaudeville occasionally; would have three performances a day; at each of which would eat a light bulb, half of a beer bottle well broken up, nails and a box of tacks. Never has had dysphagia, nausea, vomiting, diarrhea or constipation; never pain in the abdomen or rectum, or cramps. Bowels always regular. Occasionally saw glass in the stools, but never pieces of iron. Yesterday and day before ate several cartridges, and had tacks with his breakfast this morning.

Examination: Tongue clean; holds it out straight, no trembling. No cuts or scars in mouth or on tongue. Abdomen: Stomach apparently normal in size and position. Liver and spleen not enlarged. No tenderness; muscles are large and strong, but not "stiff." Could feel contracted cecum and descendng colon, but they were not tender; could not feel any foreign bodies in them. Has had right inguinal hernia since childhood; now of considerable size; can be pushed back; gives no pain or trouble. Lower jaw and lip prominent; suggest adenoids when young. Pulse regular; seems nor-

Roentgenogram showing foreign bodies in colon.

mal; heart sounds negative. Eyes: Right lid droops; left more open, but not entirely normal. Says can see more light with left eye than with right one. Sees well. Needs glasses for reading. Pupils normal size; sluggish to light. Knee-jerks increased. Romberg negative. Coordination good. Memory good. Thinks clearly. Never any trouble in making decisions. Association of ideas good. Talks consecutively. He readily understood questions asked, and was willing, quick and clear in his answers. Gave details wanted; there was no evasion, and he apparently told the truth.

X-ray examination by Dr. Waite: Picture taken first lying on the abdomen. Then fluoroscoped in a standing position. Few small indefinite articles in the stomach. There were no tacks in the stomach. Ptosis of colon, which contains two cartridges, tacks, glass, and a few other small articles. Barium meal given; fluoroscoped standing. Stomach vertical, mostly on the left side, and narrow. Peristalsis very poor or none; pylorus closed, but pressure forced a little barium into duodenum. No evidence of peptic ulcer present. (See figure.)

Some interesting features of this case are:

1. The frequent swallowing of foreign bodies without any evidence of insanity or imbecility.

2. No apparent injury to the mouth, tongue, esophagus, or rectum.

3. No symptoms of injury to the stomach, small intestine, or colon.

4. The rapid evacuation from the stomach of dangerous foreign bodies, in spite of poor peristalsis and a mild or moderate pylorospasm.

MINUTES of the Forty-Third Annual Meeting ARIZONA STATE MEDICAL ASSOCIATION

June 7, 8 and 9, 1934.
PRESCOTT, ARIZONA

GENERAL SESSIONS

First General Session was held in St. Michael Hotel, Thursday forenoon, June 7, being called to order at 9:30 a. m. by N. C. Bledsoe, President. Rev. Charles Franklin Parker, of the First Congregational Church of Prescott, gave the invocation, as follows:

" O God, the great healer of all man's infirmities, we come into Thy presence at the opening of this council of Thy servants of healing, acknowledging our gifts from Thee. We pray Thee our Father, that upon these who serve humanity and are dedicated to noble pursuits of ministering unto Thy children as physicians and surgeons, there may rest Thy special care, guidance and insight, and that they may ever be conscious of the great wisdom and spirit that is of Thee. This day we thank Thee for the great service rendered by the medical profession to the suffering and sick, and for the ever increasing consideration and progress in the matter of overcoming the deadly foes of mankind in their courageous and endless research, and for the unselfish giving of themselves and their ability to the prevention of sickness, and the obliterating of conditions thru sanitation and preventive education that have in the past produced many of the ravaging forces of mankind. And we thank Thee, too, for the improvements in the science of medicine, and for the perfecting of techniques and skills. And we are further grateful, our Father, for the revelation thru them that has brought into the possession of man knowledge whereby those suffering from mental ailments and nervous disorders may receive proper care guided by scientific diagnosis. We give thanks for their inconspicuous and sacrificial service to all mankind and for such a manifestation of the spirit of the Master.

We recommend them unto Thee, and ask for them Thy continued care and revelation. Grant that truly the spirit of the great healer of men's ills may rest upon them, now and forever, in the name of Jesus of Nazareth. Amen."

The Address of Welcome was given by Hon. Charles F. Robb, Mayor of Prescott, in a few, well chosen words of cordial greeting.

Dr. C. R. K. Swetman, President of the Yavapai County Medical Society, on behalf of the medical profession of the county, gave a short welcoming talk.

Dr. Win Wylie, of Phoenix, gave the response to those welcoming words. He spoke of the meeting held in Prescott more than thirty years ago, when he was president of the Association. He spent some three months of time in preparing a paper, and read it to an audience of five members. Today 18 members are present, which indicates a growth of 13 members for the opening session. That is wonderful! (Note:—Some of those present are still trying to figure out whether the doctor was sarcastic or not.)

President Bledsoe announced that the resignation of President-Elect Holmes had been received shortly after the meeting at which he was elected. This resignation was forced upon Dr. Holmes because of illness. In accordance with the constitution, the vice-president, Dr. Meade Clyne, succeeded to the office of president-elect and will become the president at this meeting.

Since the last annual meeting, the Basic Science law was subjected to referendum vote and was confirmed by popular vote. It is now a law of the state and should be of great benefit. This law will doubtless be attacked in some manner at every election, and the medical profession must be eternally on their guard to prevent undesirable legislation designed to nullify this act.

The office of president was then turned over to Dr. Meade Clyne. He expressed his appreciation and stated that the Committee on Local Arrangements had requested that the president's address be given at the banquet, and the papers of the Scientific Program were then taken up.

The first paper read was by Dr. Dudley Smith, of San Francisco, Calif., his subject being "The Menace of Rectal Suppositories—Care of Rectal Cases." After reading the paper, he talked about the treatment of common ailments of the anus and rectum, including fissure, hemorrhoids, prolapse, cryptitis. Discussion was opened by Dr. Willard Smith of Phoenix.

The next paper was by Dr. Roy Hewitt of Tucson, on "Proctoscopy as an Aid to Diagnosis." Discussion was opened by Dr. V. G. Presson of Tucson, continued by Dr. Dudley Smith of San Francisco, Dr. Willard Smith of Phoenix, and closed by Dr. Hewitt.

The next paper was by Drs. W. O. Sweek and Guy C. French, of Phoenix, on "Intestinal Obstruction." Discussion, in the absence of Dr. A. C. Carlson of Jerome, was opened by Dr. R. O. Schofield, of Boulder City, Nev., continued by Dr. Win Wylie of Phoenix, Dr. J. M. Greer of Phoenix,, with closing discussion by Dr. Sweek.

Announcement was made that Dr. W. C. Carhart, of Fort Whipple, had an interesting exhibit of pathological specimens at the hospital of the Fort, open for inspection by any one interested.

The afternoon session of June 7th, was called to order at 2:10 p. m. by President Meade Clyne. The first paper was by Dr. E. Clarence Moore of Los Angeles, on "Pre-operative Preparation and Post-Operative Care." This was read by Dr. E. H. Wiley, his associate. Discussion was opened by Dr. David M. Davis of Phoenix, continued by Dr. C. A. Thomas of Tucson, with Dr. Wiley closing.

The next paper was by Dr. R. F. Palmer of Phoenx, on "Rating Permanent Partial Disability by Functional Measurements." Dr. C. E. Yount of Prescott, who was to open the discussion, was ill, and Dr. R. D. Kennedy of Globe gave the first discussion, being followed by Dr. Samuel D. Ingham of Los Angeles, Dr. R. O. Schofield of Boulder City, Nev., Dr. D. F. Harbridge of Phoenix, Dr. J. M. Greer of Phoenix, with Dr. R. F. Palmer closing.

The next paper was by Dr. W. Warner Watkins of Phoenix, on "Roentgen Therapy of Inflammation." Discussion was opened by Dr. C. A. Thomas of Tucson, continued by Dr. Meade Clyne of Tucson, with closing discussion by Dr. Watkins.

Dr. Frank C. Goodwin, the Fraternal Delegate from the El Paso County Medical Society, telegraphed his regrets at being forced to be absent because of illness, and his paper was read by title: "A Bone Brace to Prevent Toe Drop in Paralytics."

The Thursday Evening Session, preceding the smoker, was given over to a consideration of the relations between the Association and the Arizona Industrial Commission. Dr. R. F. Palmer, Medical Referee of the Commission, presided. He first introduced Hon. B. B. Moeur, Governor of Arizona, after briefly outlining some of the problems which have come out of a study of the medical work of the Commission in Arizona.

Governor Moeur stated that he was a common every-day doctor, trying to run the state government. In connection with the Industrial Commission's work, he does not think that the fixed fee is always equable. When a doctor treats an injury which gives him more than the usual trouble, he should be properly compensated. He would prefer to pay the doctor more money than cut short his services. And the same with the injured man. Cannot class all cases alike. The Commission may have been a little too severe on the medical profession, and think we should come to a better understanding between the profession and the Industrial Commission. We must have cooperation to make this state what it should be. Many people are ready to chisel the compensation on the slightest pretext. He thinks the Industrial Commission and Dr. Palmer have a sympathetic feeling for the medical profession. At the same time they must guard the funds which are coming in and must be very careful. Some doctors have been underpaid for work done, and for extraordinary cases, extra compensation should be paid. He thinks that the Advisory Board, such as was recommended in the business meeting (see) will bring about a better understanding between the medical profession and the Commission.

Dr. Palmer said that he was glad to hear Governor Moeur say what he did about the fee schedule. He, himself, does not thnik that the schedule is right. The purpose of the Advisory Council proposed in the resolutions which are to be acted upon later, is to supply an active committee actively interested in taking care of all questions of medical relations. He introduced Mr. Keener, a member of the Industrial Commission, who read a paper.

Dr. Palmer remarked that Mr. Keener reflected the attitude of the Commission with regard to the medical profession. He then introduced Mr. Leo Guynn, head of the Claims Department of the Industrial Commission, who read an interesting paper. Dr. Palmer stated that time could not be taken for discussion of the suggestions but thought that a half day should be given over to consideration of industrial medicine, at the next annual meeting.

The General Scientific Session of Friday morning, June 8th, was called to order at 9:40 a. m. by President Clyne.

The first paper was by Dr. Howard K. Gray, of the Department of Surgery of the Mayo Clinic, on "Surgery of the Biliary Tract." In the absence of Dr. George Goodrich, the discussion was opened by Dr. Robert S. Flinn of Phoenix, continued by Dr. J. M. Greer of Phoenix and closed by Dr. Gray.

The next paper was by Dr. Samuel D. Ingham of Los Angeles, on "Neurologic Conditions Commonly Associated with Diabetes, Pellagra and Pernicious Anemia." Discussion was opened by Dr. R. F. Palmer of Phoenix, continued by Dr. Max Pinner of Tucson, Dr. Orville H. Brown of Phoenix, with Dr. Ingham closing.

The next paper was by Dr. E. A. Gatterdam of Phoenix, on "Nasal Allergy." Discussion was opened by Dr. D. R. Gaskins of Phoenix, continued by Dr.

Orville H. Brown of Phoenix, with Dr. Gatterdam closing.

At this time, at the close of the forenoon program, a brief Memorial Service for the deceased members of the Association, who had passed to their reward during the past year, was held. This was in charge of Dr. John W. Flinn, of Prescott, based on the report of the Committee on Necrology. Dr. Flinn spoke eloquently and feelingly regarding the accomplishments and sterling worth of these members:

HARRY T. SOUTHWORTH, of Prescott. He practiced in Prescott for thirty years, and was a past president of the Association. He stood high in the regard of all who knew him, was a careful and skilfull surgeon, a useful citizen and staunch friend. His sudden passing left a void in the medical ranks of Yavapai County, still too keenly felt for words to bridge over.

P. A. MELICK of Williams: He, too, was a pioneer practitioner of some thirty or thirty-five years in Williams. He was highly regarded in his community. He was a charter member of the Yavapai County Medical Society.

LEWIS WALSH, Clarkdale: Also a member of the Yavapai County Society, cut off at an untimely age, in the middle of his usefulness.

M. C. COMER, Tucson: A comparatively recent addition to the medical ranks of the state, in the specialty of eye and ear. A practitioner who was highly regarded in Pima County.

J. W. BAZELLE, of Winslow: Another practitioner of long standing in Arizona, who had been located for nearly twenty-five years in that community.

R. E. YELLOTT, Benson: He had practiced in the southern part of the state, being engaged in mining practice there and in northern Mexico. A highly regarded member of the Cochise County Society.

CHAS. L. HATHAWAY, Winslow: A practitioner of some thirty-five years in Navajo County, a highly respected and useful citizen of that community.

JOHN WIX THOMAS of Phoenix: One of the very old timers in the medical profession of the state. Dr. Thomas was a man of sterling character and very deep convictions. He served his community and state well, and was honored by them. For many years he was secretary of the Medical Examing Board.

These names will be among those classed as heroes when the last great trumpet sounds. One and all, they fought the good fight, they have finished the course, they have kept the faith; henceforth there is laid up for them crowns of righteousness. May their souls rest in peace!

Memorial Prayer: "O God, the God of the spirit and the body of man, in whose embrace all creatures live, we pray Thee for those whom we love, whose dwelling and need Thou knowest, Lord, grant them light and rest and peace in paradise. If in any way we may minister to them, or they to us, be pleased in Thy love to reveal the way.

We give Thee hearty thanks for the good example of all Thy servants who have finished their courses, who have labored for Thee, and with Thee, in the noble ministry of healing, who have given their lives in the service of their fellowmen. Keep them, O Lord, in Thy holy love; remember them in Thy divine mercy, and grant that increasing in knowledge and love of Thee, they may go from strength to strength in the life of perfect service, and that living in the light of Thy eternal and perfect love, they may learn to love Thee, and us with a love that is immortal. Infinite and Eternal, through Jesus Christ our Lord, who livest and reignest with the Father and the Holy Ghost, one God, world without end."

The afternoon session of Friday, June 8th, was moved to the Elks' Theater, so that moving pictures could be shown. The first paper was by Dr. Max Pinner of Tucson, on "Physiology of Pulmonary Collapse." Discussion was opened by Dr. John W. Flinn of Prescott, continued by Dr. Orville H. Brown of Phoenix, and closed by Dr. Pinner.

The next paper was by Dr. C. A. Thomas of Tucson, who read a paper on "Collapse Therapy in Tuberculosis," and showed an original moving picture in natural colors of thoracoplasty. The discussion was opened by Dr. E. A. Gatterdam of Phoenix.

The next presentation was by Dr. Arthur Smith of Los Angeles, on "Plastic and Reconstructive Surgery of the Head." This paper was accompanied by three or four reels of moving pictures showing several cases of reconstructive surgery technic. The discussion was opened by Dr. Paul Bennett of Tucson, President of the Arizona Dental Association.

The final paper of Friday afternoon was by Dr. Fred G. Holmes and Dr. Howell Randolph, on "Pneumothorax Treatment of Lobar Pneumonia—Report on Eighteen Cases." This was read by Dr. Randolph. Discussion was opened by Dr. Robt. Flinn, continued by Dr. O. H. Brown and closed by Dr. Randolph.

At the banquet on Friday evening, the President's Address was delivered by Dr. Clyne. Also the address of the President of the Auxiliary was given by Mrs. C. R. Swackhamer of Superior.

The Fraternal Delegate from Texas, Dr. G. T. Vinyard of Amarillo, presented a paper.

On Saturday morning, the general session was called to order by President Clyne, at 9:20. The first paper was by Dr. Louis Baldwin of Phoenix, on "Treatment of Secondary Anemia." In the absence of Dr. Baldwin the paper was read by Dr. H. T. Franklin. Discussion was engaged in by Dr. W. W. Watkins of Phoenix, Dr. H. A. Reese of Yuma, Dr. Meade Clyne of Tucson, Dr. R. D. Kennedy of Globe.

The next paper was by Dr. Robt. S. Flinn, of Phoenix, on "Treatment of Nephritis." Discussion was opened by Dr. D. F. Harbridge of Phoenix, Dr. R. D. Kennedy of Globe, with Dr. Flinn closing.

The next paper was by Dr. R. K. Smith of Tucson, on "Post-partum Hemorrhage." Discussion was opened by Dr. Kennedy of Sacaton, Dr. Fuller of Sells, Dr. Meade Clyne, with Dr. Smith closing.

The next paper was by Dr. George Colvard, Fraternal Delegate from New Mexico, Deming, N. M.,

on the subject of "Rural Obstetrics—Delivery in the Home." Dr. H. A. Reese of Yuma opened the discussion, being followed by Dr. R. K. Smith, of Tucson, Dr. R. A. Wilson of Tucson, Dr. G. T. Vinyard of Amarillo, with Dr. Colvard closing.

Final paper of the program was by Dr. M. I. Leff of Glendale, on "Common Sense about Medical Ethics." Discussion was opened by Dr. Orville H. Brown, being followed by Dr. R. F. Palmer, Dr. W. W. Watkins, with Dr. Leff closing.

Scientific Session was adjourned, and open session of House of Delegates convened.

Minutes of Council Meeting.

Council meeting of June 6th. Called to order at 8:30 p. m. Present: President N. C. Bledsoe, President-Elect Meade Clyne, Secretary D. F. Harbridge, E. C. Houle, Councilor of Southern District.

Minutes of last meeting were read and approved. The Report of the Treasurer and the Medical Defense Committee's report were presented and approved and accepted. Letter from President-Elect, Fred G. Holmes, tendering his resignation, was presented by President Bledsoe, with statement concerning the accession of Dr. Meade Clyne to this office. Councilor Houle reported on the activities in Santa Cruz County, stating that they are now one hundred per cent united. Their good work was shown in the Basic Science referendum election.

Budget was presented and adopted for approval of the House of Delegates.

Meetings of the House of Delegates.

The Executive Session of the House of Delegates was held on Friday morning, at 8:30 a. m. Roll Call showed the following present: President Meade Clyne; Secretary D. F. Harbridge; Councilor E. C. Houle. Delegates: Drs. Greer, Davis and Watkins for Maricopa County; Dr. C. A. Thomas for Pima County; Dr. R. D. Kennedy of Gila County; Dr. Gustetter of Santa Cruz County; Dr. Stump of Navajo County.

Reading of the minutes of the 1933 meeting was dispensed with, on motion and vote, as they had been published in the official journal. Report of the Council was then presented (see above). The proposed budget was as follows:

Secretary	$120.00
Treasurer	50.00
Insurance	30.00
Medical Defense	100.00
Southwestern Medicine, per member	2.00
Welfare Committee	200.00
Reporter	100.00

Treasurer's report was read by the secretary, with comments. The Medical Defense Committee's Report was read, with comments. Report of the Council was approved by vote of the House of Delegates.

Report on Southwestern Medicine was given verbally by Dr. Watkins.

Report of the Cancer Committee, given by Dr. E. P. Palmer, Chairman, was read by the secretary, and approved. (see below.)

Report of the National Legislative Committeeman (Dr. R. J. Stroud) was presented. (V. v.)

After some discussion, motion was made and approved, that reports of standing committees, in the future, be published in the official journal at least a month preceding the annual meeting.

Miscellaneous Business: Dr. Gustetter thought that we should have a session devoted to a discussion of economic questions and other important matters outside of the scientific phases of medicine. In the counties, every effort should be made to get every doctor into the society. Every county should have a hundred per cent of their doctors in the county society. Motion was made that hereafter one-half a day of the Association's program be given to discussion of medical economics, and that resolutions and reports on this subject be published the month before the annual meeting. Motion carried unanimously.

Motion was made that the resolution introduced by Dr. R. F. Palmer (see Committee Report), be referred to the Resolutions Committee for report at the next meeting of the House of Delegates. Dr. Swackhamer thought the report should go over for a year. Motion was put and carried.

Dr. E. C. Houle of Santa Cruz County, presented a resolution of protest against the state of ignorance in which we are allowed to remain by the American Medical Association, regarding certain economic questions, particularly with regard to the situation in the balance of the world in the socialization of medicine. The resolution urged the Association to represent things in such a fashion to the American Medical Association, that a larger measure of information and precaution will be forthcoming.

Resolution was discussed by Dr. Max Pinner and Dr. C. R. Swackhamer. Dr. Swackhamer stated that we lack a continuity of contact with the American Medical Association because we do not have a delegate who would go to their meetings year after year. He made motion that we select a delegate who would be interested and willing to attend, and pay his expenses to the meetings. Motion was put and carried.

Open meeting of the House of Delegates was held on June 8th, at luncheon, at Hassayampa Hotel. Dr. Clyne stated that the Treasurer's Report contained certain recommendations which had not yet been disposed of. Dr. Yount presented these.

(1) Recommendation that the dues be continued at the present figure of $12.50 a year, and prorated as in the past ($6.00 for medical defense and $6.50 to general fund.) Motion was made and adopted that this recommendation be approved.

(2) Motion was made that the second recommendation of the treasurer regarding the purchase of $3000 of U. S. bonds be approved. Motion carried.

Motion was made, after explanation by the treasurer, that he be authorized to cash in any bonds that the Government might call, taking advantage of the best offer. Motion was carried.

(3) Recommendation that the Welfare Committee's appropriation be budgeted. Dr. Hamer stated

(Continued on page 281.)

CITY-COUNTY HOSPITAL (El Paso) STAFF MEETING
March, 1934

DISCUSSION OF EFFICIENCY REPORT

Dr. Gambrell suggested that, in a charitable institution, the percentage of autopsies should be higher; this month shows less than 50 per cent. Since the consent of the relatives is necessary for an autopsy, unless such consent is forthcoming, it is impossible to do them. It was suggested that possibly arrangement could be made to get permission for an autopsy in the event of death, at the time of admission for an operation.

The question was raised as to the value of an autopsy in the cases that did not come to autopsy, as to whether the cases were routine diagnoses, from which nothing was to be learned. Dr. Gambrell said that he felt there were very few autopsies that "we can't learn something from." He cited the case of a death following a small stab wound, apparently insufficient to cause death, in the right scapular region. The patient lived about 45 minutes after injury. He had been badly beaten up in a fight, and had an autopsy not been held, it would have been thought that he had suffered an unrecognized head injury, which was responsible for death. However, on autopsy, it was found that the entire left lung was tuberculous, that practically no normal lung tissue was left, and the right lung had been completely collapsed with the small stab wound; the wound was very, very small, not deep, but was sufficient to collapse the good lung, which, in the presence of a solidified left lung, was sufficient to cause death.

Dr. Berger stated that most of the deaths on which autopsy is not performed occur during the night hours, when none of the family are present; the body is taken to the undertaking parlors and it is almost impossible to reach the family and get permission for autopsy later. He advised that autopsy permits were secured in practically all deaths occurring during the daytime, or when members of the family were present. Dr. Waite stated that autopsy was unnecessary in many cases, and the families did not want autopsies unless it was necessary to determine the cause of death for the report; that, in cases of children, with pneumonia, and so forth, autopsy was unnecessary. Doctor Barrett stated that it was much more difficult to get autopsies on children, because the families were "more sentimental" about it. The discussion closed with Doctor Varner's suggestion that the interns secure as many autopsy permits as possible.

During the course of the above discussion, Doctor Strong asked why the hospital deaths were no longer discussed as a routine procedure. Dr. Gambrell said that, in his opinion, if an attempt were made to discuss thirty or more deaths at one meeting, there would be no one left to discuss the last three cases! Doctor Varner advised that this had been brought up previously, and it had been decided, because of the time element, to stress any cases of particular interest, but to discontinue discussion of all deaths.

TRACHEOTOMIES IN THE CITY-COUNTY HOSPITAL

Presented by Dr. Bloyce Britton.

The high mortality rate in our tracheotomy cases here at the hospital has been mentioned to me frequently. I think there are very few who understand the difficulties that we encounter here in the proper care of a tracheotomized patient. In the first place, we have no room properly equipped and ventilated, with controlled humidity proper for tracheotomy cases. Second, we get only emergency cases, that are already nearly dead. I would say 98 per cent of them are in extremis. I find that the statistics in the City-County Hospital for the years 1929 to 1932 are as follows:

Year	Tracheotomies	Deaths	Percentage
1929	4	2	50
1930	3	3	100
1931	3	2	66⅔
1932	None	—	
1933	7	2	71

Now, that 100 per cent in 1930 is a pretty high mortality. I have found only four autopsy reports. Doctor Waite will talk to you about the findings at autopsy. We will take up the cause of death in tracheotomy primarily as an operative procedure.

For a planned tracheotomy, there is no such thing as mortality, or should be no such thing as mortality. As a purely surgical procedure, the mortality in tracheotomy should be nil. In the streptococcic sore throat pseudo-diphtheritic throats, and true diphtheria, the mortality is high. In my observation of the deaths here, they have not died from any of the complications of tracheotomy. Pneumonia following tracheotomy is more theoretical than real. Jackson says in his clinic not over one-half of one per cent has ever developed pneumonia from aspiration. In our cases here, the autopsy reports speak simply of the contour of the body, say that the lungs are well ventilated, aerated, and most all the cases show a membrane extending clear down the tracheal tree, showing a very marked laryngeal diphtheria.

As stated before, the cases admitted to the City-County Hospital for tracheotomy are all emergencies. The majority of the tracheotomies are done by the interns. I have tried to tell the interns each year that they will have to do some of these, that there won't be available a man who can show them and tell them a few of the points in the doing of a tracheotomy: that is, to eliminate danger by avoidance of anything but a midline incision; to avoid aspiration by posture (advising the Trendelenburg position, or the use of a pillow under the shoulders, with the head drawn back); and the use of the proper-sized cannula. I must say that the interns have done emergency tracheotomies just as well as you or I would do them.

Now, as to the nursing care of those patients: Tracheotomized patients should have a special nurse, day and night. They should have a machine to as-

pirate mucus, feathers to clean out the tubes, new tubes to reinsert, cannulas of the proper size, and all of those things which go to make up a true tracheometric ward. We have none of those things. The majority of the time, we have two nurses on duty; we have a tracheotomy patient in isolation, and two nurses in the hospital at night. I know that some of those patients have choked up, but most of them have died of myocardial failure from diphtheria. I have had the disease. I know how it works. I had a myocardial something that took me off my feet, and I went out. I think that's what these cases die from, whether acute dilatation or not; they die apparently from heart failure, due to sepsis of diphtheria.

In view of this high mortality which we have here, you will say, how about the administration of antitoxin? We try to see these patients the minute they come in; if there is a suspicion of diphtheria, 20 thousand units are given that night, repeated in six to forty hours. Even in bad streptococcic throats, the diphtheria antitoxin is a very good prophylactic measure. Then the patients are usually given supportive treatment—which includes care as to ventilation of the room. The air out there is bad—the worst possible. Our high mortality is not due particularly to lack of care. That is bad, but if they died from want of attention, they would die from asphyxiation of bronchopneumonia, which they don't do, ordinarily.

There are two bad results usually due to blunders in emergency tracheotomies. First, emphysema. The intern called me out one time to see a case on which he had done a tracheotomy. He had closed the wound up to make it look pretty, and had a nice emphysema; the patient was puffed out like a balloon. The second is mediastinal bleeding. We haven't had any at all.

So, in view of all these facts, we are open to suggestions on this service, for any constructive or destructive criticism, for the benefit of the service in these cases. The patients come out here in a crisis. We might be criticised for saying, "tell the intern to go ahead and do it," but most of those cases are cyanotic and gasping in the last stages of asphyxiation, and you can't call the attending man down in time to do an emergency tracheotomy, for it is just what the word implies. I don't think our mortality is due to delay in doing the tracheotomy after the patient enters the hospital.

Sometimes, in spite of all our experience, we are fooled. A patient came into this hospital about three months ago. She had all the symptoms of gangrene of the throat. There was a woody phlegmon under her neck. Her tongue was out between her teeth. The whole throat was gangrenous. I saw the patient the afternoon after admission, just before her death. The intern had done a tracheotomy on that patient—an excellent tracheotomy on a woman with a cellulitis fully three inches thick. I thought it was purely a streptococcic infection. I thought she had none of the characteristics of a diphtheritic infection. We put in a larger tube, aspirated some mucus out of the lung with the catheter. When she came to autopsy, there was a diphtheritic membrane down past the primary bronchi. I don't think diphtheria antitoxin or anything else would have done her any good. The diphtheritic membrane was coexistent with the cellulitis and gangrene. She was cyanotic when I saw her; the pulse was rapid; she was dying, and with definite myocardial failure.

They are given antitoxin, and they die.

Now, as to the construction of a room for tracheotomized patients. That would involve an expenditure only for a humidifier to keep the air in the proper condition, and a heater to keep the air properly warmed, to keep the room warm, moist, and well ventilated, and would require the services of a special nurse when we have tracheotomy patients in the hospital. Some of this heart failure may be due to the fact that these patients have trouble and difficulty in breathing, due to blocking and obstruction of the tracheal cannula in the ward. I cannot say. But we do know that it is a strain on the heart to try to breathe with an obstructed cannula. We can't help that with the limited facilities.

This matter has been brought up for discussion, to show that our mortality is very high on these tracheotomized cases. It is another thing that I think could be improved in one respect, possibly; but on the other hand, our efforts are rather futile, due to the lateness of the disease when we get it.

DISCUSSION

DR. GWINN: First, when we get a case with diphtheria of the larynx, the question is whether to do a tracheotomy or an intubation of the larynx. Personally, I would rather do an intubation. There are fewer complications, such as emphysema from closure, or septic pneumonia from aspiration, secondary infection of the wound, or even, sometimes, erysipelas. Of course, where the obstruction is below the larynx or higher than the level of the vocal cords, then tracheotomy is all that can be done. In the literature, there are opinions both pro and con, as to which is the better of the two methods; and, actually, I think it might come down to the skill of he operator, since there is so much question as to which is the better method. Why we don't do intubations out here, I don't know. It is possibly because of the fear of not getting the intubation tube in correctly. Those that I have seen, I thought died from myocardial failure. One of them, on whom Dr. Waite did an autopsy, I know died of septic pneumonia. I think Dr. Britton's suggestions that we should have better facilities for doing this work, are good. It is quite a handicap, especially to the patients, when it comes to the matter of nursing, because the matter of doing a tracheotomy is fairly simple, and with proper nursing attention, the mortality is decreased greatly.

DR. BARRETT: Dr. Britton is quite right about the high mortality being due to the fact that we get these cases out here so very late. They are all emergency cases, and the deaths, I should like to

emphasize, are from diphtherial toxemia. There isn't any doubt about that. As to the choice of operative procedure. I don't think there is any doubt that tracheoomy gives the emergency measure where there isn't any intubation set here, and it requires considerable skill, and those patients haven't time to wait. That is why intubation is not the procedure of choice in this institutino. Space is rather at a premium here, and we just have to do the best we can by offering as much humidity through the tubes as possible, and get by the best way we can. I think any life we save is just that much gain, that much to the good, instead of having an even higher mortality rate than we actually have.

DR. WAITE: I want to say, just from what I have seen in post-mortem work, that, whether those kids are tracheotomized or whether they are let alone, they have the same condition when I open them up. There is a bunch of membrane from the larynx to the bifurcation or further than that; and how you are going to do any tracheotomy that will do any good is beyond me—it is a plumb waste of time. Every one of them has had a pneumonia, that I have posted. Whether it is a diphtheritic pneumonia, I don't know. The middle lobe of the right side is most frequently involved. It is beefy red and solid, but not as solid as a lobar pneumonia. It is not liver-like. The bases of both lobes are always involved, but usually not as much as the middle lobe on the right side. Why this is so, I don't know.

It is just a waste of time, talking about putting tubes in cases like these. The only thing to do is to jump on the health department for letting there be any diphtheria. That's the first place to begin, and the health department is trying to do it. We've all got to help. We've got to talk immunization to all of those families, and when they get immunized properly, they won't have diphtheria. If children with sore throats are given prompt treatment, there will be few cases requiring tracheotomy. Don't wait for any hemming or hawing. Give them antitoxin, right now. The earlier, the better.

This tracheotomy business is just playing around with something that has been neglected, and should have been attended to several days ago. You can't do much about it. You can't clean out a trachea that is full of membranes from one end to another, through a tracheotomy tube. You can't cure one of these pneumonias with a tracheotomy tube or anything else. So our first work is prevention. The next is early treatment.

DR. McCAMANT: I appreciate what Doctor Waite said, and I make no excuses for the Health Department. We are immunizing just as rapidly as we can, and I want to say that the medical fraternity, too, are helping us, as proved by their cooperation during November and December.

The children who died during 1931, up to the middle of 1933, were not under my service. I had only those over twelve years old. I saw two of those cases, however. I called Dr. Barrett and asked about one. Some of those cases shouldn't have died, because if you intubate a child and get enough air in its lungs to live four or five days, and it has enough antitoxin, it is not going to die. The last child I saw that was tracheotomized recovered. I saw it five or six days after the tube was placed. The nurse told me it was developing pneumonia. (I should have said "'tracheotomized" before, because I don't think we have ever done an intubation here.)

We cleaned out the tube, and you could see the membranes. We gave it 60,000 units of antitoxin. The child got well.

I think Dr. Waite will tell you some of those children needed more antitoxin. I do not approve of doses of 20 thousand units; I don't think that is enough for any child with laryngeal diphtheria: 20 to 30 thousand intravenous, is more like it. If your tube will keep the child alive 24 to 36 hours, and it gets plenty of antitoxin, the majority will get well. I believe, like Dr. Gwinn, that intubation should be done more often than it is done. It is easier to do a tracheotomy, but after practice it is just as easy, if not easier, to intubate. I had two in 1931 and one in 1933 that we intubated. They are all alive. One had been sick six days. It was blue. We had an awful time getting it still long enough to put a tube in its throat. I believe intubation is safer, and I believe it should be done more often. I believe the hospital should have one of the sets, and the interns should be taught to use it.

We will furnish antitoxin to any physician who wants it, whether for his private patients or for his charity patients. We don't want to go north of the tracks for the immunization of people who can pay. We are now giving the Allen precipitated toxoid in one dose as immunization, ½ cc. to the dose. When you see your patient once, you are through with him. A certain number of those cases will not come back for the second, and mighty few for the third dose, when you give it in three doses. If you can accomplish immunization in one dose, why not do it? We have not had a case of diphtheria in any child who has been immunized with a single dose of Allen precipitated toxoid. They are using it exclusively in New York.

DR. GALLAGHER: There are probably not a dozen intubation sets in El Paso. Probably there are not a dozen men capable of intubaton wthout dong more harm than good. But there isn't a physician who can't do a tracheotomy, and for that reason, I think that probably, for the average physician, tracheotomy is the best procedure. Ordinarily, you don't have time to use the intubation set, if you have it. You're likely to have to do it right there. You haven't time to go out and get your intubation set. You only get experience by experience. You can do as many intubations on a dead person as you wish—it isn't like doing it with live patients. I have seen a lot of damage done with intubation, and not being expert enough to do it—when a simple tracheotomy might have saved the patient.

DR. CUMMINS: I cannot help but sympathize with the problem Dr. Britton si up against. I know

all of us have a great deal the same problem in our treatment of our acute appendicitis cases, and I am glad Dr. Waite got down to the bottom. I take it that the vast majority of these were emergency cases. But in analyzing anything like this from the hospital standpoint, it would be nice to know how long these patients were in the hospital, and what was done Maybe they were all brought in purely for tracheotomy. If so, then what was wrong on the outside? The same thing that is wrong with the cases of appendicitis. The majority have been sick three or four weeks before they get in. A large percentage of them haven't seen a doctor until they are told that they must go to the hospial. The Mexican population is not educated to enter the hospitals. I know the hosptial records don't seem to bear that out, but it is true. They will all stand pain in the abdomen for a long, long time before they even call a doctor. So I don't think we can blame the medical profession entirely. There are probably a lot of them that are not diagnosed, or are only seen once, and can't be diagnosed. But so far as this tracheotomy business is concerned, I want to agree, thoroughly, with Dr. Gallagher.

I had been out in practice for several years before I had occasion even to think of intubation. When I did find a case that needed it, I called two or three throat men before I found one who even knew where to get a set. If I hadn't stopped him, when he did start doing it, he would have killed the child. That throat specialist hadn't been out of the hospital very long. He had been doing them. He had recently been in the hospital, and was in practice. You say the interns should be taught to do intubations. How are you going to educate them with that many cases—possibly three or four in a year? The whole four interns won't see perhaps more than two cases during the entire time they are here. How are they going to get practice? Most anybody can do a tracheotomy. If I had diphtheria, that's what I would want done, rather than have any of these specialists who hadn't been doing it for perhaps ten or fifteen years, trying to do an intubation. It doesn't make any difference whether you are doing intubation or tracheotomy—you cannot do it off in a room without moisture and proper temperature. I have an intubation set. I haven't used it since I have been in El Paso. If I was lucky and inserted the tube—well, I was lucky. If I wasn't successful, I would go ahead and do a tracheotomy. But they've got to have attention following a tracheotomy.

DR. BRITTON: I forgot to mention the matter of intubation—but when you start arguing intubation vs. tracheotomy, it's like arguing whether the hen was here first or whether the egg was here first. In regard to an intubation set for the hospital, I have a gold one, which my father gave me; I think he gave $350.00 for it; and I will give it to the hospital, if any of these men want to use it. I'll bring it down here, if they want to use the thing. But just use your common reasoning about intubating a child with diphtheria. The purpose is to aerate the larynx. The largest intubation tube would give about as much air as you get through a soda tube. With a diameter of less than 3 mm., how much mucus, and so forth, is going to come out? The practice of intubation has been almost discontinued in the larger clinics. The art of inserting an intubation tube requires a great deal of skill. I have seen children killed with intubation sets, trying to intubate them, and breaking through the ventricle larynx. The danger of trauma is very great. I never cared for it. I knew I could never do it. I couldn't reason out in my own mind where it would be effective. It is just a matter of effectiveness, but I think if you will use your common sense, you will wonder why; anybody can do a tracheotomy; it is not a major operative procedure. This emphysema of the neck, infection of the neck, and so forth, is a bunch of hooey. I know from personal experience. I know there is nothing to pneumonia following tracheotomy. There is no mortality to the doing of a tracheotomy, per se. If you will look overthe writings of the men that are doing that work all the time, you will find that out. It's the simplest thing I know of.

I think Dr. McCamant's suggestion, that we are not giving enough antitoxin, is a very potent one. However, there are other men on the staff who say give it in smaller doses at more frequent intervals. We'll try that, though, giving 40 to 60 thousand units immediately, repeat it, and give some intravenously. That is a matter to be argued, both ways.

CASE REPORTS

By Dr. W. W. Waite

Case No. 549. M. J., a 43-year-old Mexican housewife, was brought to the Hospital on March ,8 1934. She was in a semi-comatose condition, and unable to give any history. I called Dr. Molinar, who sent her in, but he didn't seem to remember the case.

Physical examination revealed a markedly cachectic, emaciated and dehydrated patient. Her tongue was coated with a thick brownish fur. Neck was essentially negative. The chest showed dullness over both lungs, with a few moist rales in the bases. The heart showed regular rhythm, and had a typical embryocardia quality. The rate was 92. The abdomen was negative. The skin was extremely dry and rough, and resembled parchment, with a three plus pitting edema of both ankles. The impression was that the case was one of chronic nephritis, with a terminal uremia.

Laboratory findings: hemoglobin, 90; white blood count, 4,700 with 86 per cent polys; urine showed a 4 plus albumin, otherwise negative; N.P.N., 58.8; Kahn, 4 plus.

The patient did not respond to treatment, and died a day and a half after her admission.

The autopsy revealed the following: The body is that of a markedly emaciated Mexican woman. No external marks of violence. On section, there is nothing of importance in the abdomen except enlarged spleen. On opening the chest, the right lung is found markedly adherent with fibrous adhesions, and considerably collapsed, and on section contains many cavities and more-or-less collapsed dense fibroid lung tissue. There are some small tuberculous areas infiltrating the remainder. On the left side, the lung is removed; it is infiltrated with fibroid tissue. The upper lobe contains several cavities; the lower lobe is partly acutely congested and partly infiltrated with a progressive tuberculous

process, with numerous small consolidated areas, some showing cavity formation. Heart apparently normal. Kidneys considerably enlarged and swollen. Liver pale yellow and markedly fatty.

Diagnosis: Tuberculosis. Chronic nephritis (possibly amyloid).

Microscopic examination: Aorta shows degeneration in the media; otherwise no change. Liver shows considerable atrophy of the cells, and in places extensive round-cell infiltration. Spleen shows nothing of especial importance. Kidney shows considerable amyloid in the glomeruli, and in places some extending outside. The secreting tubules are markedly degenerated, and in places there is considerable round-cell infiltration.

Diagnosis: 1. Amyloid kidney and extensive nephritis. 2. Hepatitis. 3. Arteriosclerosis.

C. C. The patient, a 33-year-old Mexican housewife, was admitted to the hospital on Feb. 10, 1934, complaining of generalized swelling of her body.

She stated that she had been perfectly well up until six weeks ago, when she first noticed a swelling of her ankles. The edema soon became more pronounced, and she consulted a physician, who told her that she had kidney disease, and prescribed some pills, hot baths, and daily doses of castor oil. She obtained only slight relief from the above treatment, and ten days before she entered the hospital she noticed that her hands and face were swollen, in addition to the rest of her body. There had never been any pain, headache, nausea, vomiting, or diarrhea. She complained of slight dyspnea, but no orthopnea.

Physical examination revealed a Mexican woman of about the stated age, who did not appear to be acutely ill. A generalized anasarca was evident. The head and neck were essentially negative. The chest revealed dullness and absent breath sounds in the bases. The heart showed regular rhythm, fair quality, rate 120. No murmurs. The abdomen contained some fluid, but there was no tenderness, and no masses were palpable. An old scar was present on the vulva. The skin showed a marked pitting edema, extending from the feet to the forehead. The impression was that the case was an acute nephritis, with generalized anasarca.

Laboratory Findings: Hemoglobin, 80; white blood count, 16,000 with 78 per cent polys; urine was alkaline in reaction, had a 2 plus albumin, 2 plus pus cells, and a 4 plus coarsely granular casts and pus casts. There were no red blood cells in the urine. The Kahn was 4 plus.

The patient died two days after her admission to the hospital, and we obtained an autopsy, which showed the following:

Autopsy report: The body is that of a Mexican woman; no external marks of violence. Extremities markedly edematous. Abdomen distended. On section, poor nutrition; tissue edematous, large amount of water-clear fluid in the abdomen. On opening the chest, both pleural cavities are found filled with water-clear fluid, as is also the pericardium, to a certain extent. Lungs markedly collapsed. Heart small, shows no gross lesions. Spleen is large and flabby, and liver is somewhat swollen. Kidneys are somewhat enlarged, and capsule strips easily. Surfaces are somewhat mottled and cut surfaces grayish-yellow in color; cortex full.

Diagnosis: Acute nephritis, atelectasis, general anasarca and general edema.

Microscopic examination: Section of kidney shows glomeruli practically all filled with an amyloid degeneration. In the pelvis, and in places through the kidney, there are areas of marked round-cell accumulation. In places, there is amyloid between the convoluted tubules. Epithelium and secreting tubules are somewhat thinned out and granular. The change is primarily in the glomeruli.

DISCUSSION

DR. RALPH HOMAN: Amyloid disease, or amyloidosis, is found usually in prolonged suppurative cases, such as tuberculosis or chronic bone disease, in syphilis, in anemias and in cachexias. Generally speaking, it is not hard to diagnose on physical examination. We find the patient is usually pale, not necessarily anemic when we do a hemoglobin, but of a pale color. The liver in nearly all cases is palpable well below the costal margin, and has a rather distinctive feel. It is very fibrous and hard, and the border is usually sharp and not rounded as we find in some liver enlargements. The spleen in some cases is palpable in tuberculosis, where we see it most often. We have in most cases a diarrhea due to an amyloid condition of the mucus membrane of the colon. There is usually an attendant myocarditis with a low blood pressure, due, not necessarily to an amyloid condition of the heart, but probably to a myocarditis or fatty infiltration in the heart. Dr. Waite will tell you what the kidneys look like. The urinary findings in most cases show albuminuria is present, though not necessarily so. In practically every case, casts are present, varying from hyaline to finely granular and coarsely granular in some cases.

In tuberculous cases, we see a great deal of it, and when one of my cases has been sick a long time and has stopped getting better, I kind of hate to feel of the abdomen to see if the liver is enlarged. If it is, I know there is no hope for them. It is in practically all cases a terminal condition.

These two cases are not typical. Both of them were syphilitic. In neither case did the microscopical findings show an amyloid liver; while in one case the liver was enlarged, the history shows that in neither case was the liver palpable. I would have thought that in two old cases of illness, as these were, and with the advanced condition of the kidney, that we would find rather marked enlargement of the kidney, and find it palpable. But it was not, in either case. In practically every case with a prolonged illness, when we find a swelling around the ankles, going into a general anasarca, and the condition is associated with tuberculosis or syphilis or some prolonged illness, we can safely diagnose the case as amyloid degeneration.

DR. WAITE: Of course, from one point of view, these are more or less curiosities; but from another point of view, I think it would help us a great deal to understand some of the physiology of the kidney. We have had only a few cases of amyloid disease in all we have posted. We have had some remarkably large livers, some probably twice normal size, which were amyloid. We posted a case around a year ago that had a large abdominal tumor which proved to be—just an amyloid liver. But neither one of these cases reported tonight had an enlarged liver.

In the first case, syphilis was the only cause we found. We just saved the kidneys for a nice acute nephritis case—acute nephritis is not so very common. But in the second case, we studied the liver and spleen both. No amyloid changes in either one.

It might be interesting to compare. Here's a report on 100 cases of renal amyloid disease found in 9613 autopsies. (Note—Dr. Waite read these statistics from the American Journal of Medical Science for March, 1934.) In these cases, tuberculosis of the lungs was found in 70 per cent; 8 per cent showed tuberculosis in the bones, making a total of 78 per cent occurring in tuberculosis, or about four out of five. The highest incidence of renal amyloid diseases occurred in cases which had had pulmonary

tuberculosis for one year or more—64 cases. In 12 cases, renal amyloidosis was found to be associated with renal inefficiency; in other words, in 26 per cent of the 46 cases in which blood chemistry studies were made.

The various causes in these 100 cases are summarized, after tuberculosis, as: malignant tumors, 9 cases; empyema, 5 cases; chronic arthritis, 2 cases; chronic osteomyelitis, bronchiectasis and lung abscess, each 1 case; in three cases, the cause could not be determined. Hypertension is relatively infrequent in amyloid disease of the kidney. Of 35 cases with blood pressure readings, the systolic pressure was above 150 mm. in only four, or 12 per cent. In the cases of renal amyloidosis with renal insufficiency, the kidneys were either normal in size or somewhat enlarged. Renal amyloidosis may be associated with independent arteriolar nephrosclerosis. Albuminuria is a fairly constant finding in renal amyloidosis.

I think this sums up the findings in a hundred cases much better than we can in two, but, having these cases, we had a chance to study them.

That first case, we only recognized what we had too late; had it been about two weeks earlier, with a chance to do some real physiological studies on it, it might have been much more interesting. In the first case, the glomeruli were almost completely destroyed. According to one theory, the glomeruli are the parts that secrete the water. If the water-secreting parts are closed up, it would seem that the kidneys would not longer secrete. Is that the reason we get edema? In the article I read, it says that edema is due to a change in osmotic pressure due to secreting so much albumin through the kidneys. The albumin changes the osmotic pressure so that the water accumulates in the kidneys; but if it is the glomeruli that secrete, it has to dam water. I don't know which is right. Maybe they're both right, Then the tubules absorb part of the water, and put it out in the water.

The second case cannot have had very much edema; it did not have any fluid in the body cavities, and, of course, it was not as acute a case as the first one. It was slower and more gradual. The patient was markedly emaciaetd; perhaps she had taken very little fluid, and there may have been other reasons to account for not having so much edema. But it is an interesting question, offering much opportunity for physiological study, and if we understood it well, it might teach us more about how to treat all kinds of kidney conditions.

DR. WERLEY: The question of edema is a live one with me, nearly every day of my life, because I get hold of these old cases with ascites or heart failure and edema. There are so many factors in edema. The first one is the amount of sodium chloride in the body. If there is too much sodium chloride, the water follows it. Maybe the heart is to blame. I can't get water out without a certain amount of efficiency on the part of the heart. Then the acidity of the blood has something to do with it. If the blood is acid, it is more likely to have a dieresis. If alkaline, water tends to accumulate in the body more. Salyrgan, ammonium nitrate, or ammonium chloride given, you get a dieresis, much better than if you don't give them. There have been several books written on edema; the thyroid gland has something to do with it. Old cases of myxedema, water logged, with albumin, looking like an old nephritis, clear up when you give them thyroid. There are many factors to be studied.

DR. RALPH HOMAN: One thing more about the urinary findings. That might help to clear up this matter of edema. In nearly every case of amyloid disease, the early symptom, even after the anasarca is very definite, is almost always an enormous increase in the amount of the output of urine. The specific gravity sometimes goes down as low as 1005 to 1008, but the amount is increased.

CITY-COUNTY HOSPITAL (El Paso) STAFF MEETING April 18, 1934.

DISCUSSION OF CASES

Presented by Dr. Berger.

Case No. 1. F. M., a 45-year-old Mexican laborer, was first admitted to the hospital on May 24, 1933, complaining of pain in his head and neck. He stated that he had been well up until eight months previous, when he developed a pain in the back of his neck and in the region of his occiput. The pain was dull and aching in character and was of a remitting type. He stated that, during any motion of the body that involved movement of the neck, the pain became very sharp and almost unbearable. More recently the pain became almost constant, and he was forced to lie flat on his back and steady his head with his hands. One year ago, while moving a piano, he wrenched his neck, and it remained painful for several days, but he seemed to recover, until five months later, when the symptoms that he now has, began.

Patient is married and his wife has had six miscarriages, closely following each other and all coming early in pregnancy.

Examination of the head was negative except for the prominence of the eyes. Examination of the neck showed exquisite tenderness over the third cervical vertebra to the right, and there was a marked prominence in that location. Attempt at moving the neck caused exquisite pain. The rest of the physical examination was essentially negative.

A spinal tap was done, and the fluid was clear under normal pressure. Laboratory examination, including a Wassermann, was negative. The impression was that the case was either one of (1) caries of the cervical vertebrae, (2) possible dislocation, or (3) lues. Laboratory tests showed his blood count to be normal, and the urinalysis was normal. The urine was tested for Bence-Jones proteins and none were found.

During his stay in the hospital, the patient was seen by several of the staff men, who concurred in the diagnosis of possible caries of the cervical spine or a possible dislocation. He was discharged from the hospital on June 19, 1933, as unimproved. During his stay in the hospital, his neck and chest were x-rayed and showed the following:

5-2-6-33—Lateral stereo of neck shows destruction of all the bodies of the cerebral vertebrae except the first and second. There is a little bit of one body remaining which seems to be the fourth, and down about the region of the sixth there is considerable angulation. The cause of this change is not apparent. There is no new bone formation, and tuberculosis cannot be ruled out.

6-3-33—x-ray of the chest shows the chest symmetrical, with a tremendous slant of the ribs and narrowing of the intercostal spaces. The upper mediastinum is greatly widened, extending clear up

into the neck and down into the heart shadow. The rest of the lung substance on both sides is hazy, and there is considerable infiltration around the right apex.

He was readmitted to the hospital on March 12, 1934, and physical examination at that time revealed a hard lump about the size of a small orange, which appeared to be attached to the left mandible. The cervical vertebrae appeared to be entirely destroyed, and there was exquisite tenderness on the slightest motion of the neck. The rest of the physical examination was essentially negative. The impression at this time was that the case was a malignancy of the cervical vertebrae, with metastasis to the jaw. Laboratory examination of the blood and urine was negative. Another x-ray was made of the neck, and showed the following:

3-12-34—Film of the neck, for check-up, shows the bones in the neck and the base of the skull soft, with calcium absorbed, casting hardly any shadow.

Patient was sustained on morphine and luminal until March 22, when his temperature shot up from 99° to 105°. Examination of the chest at this time revealed a consolidation of the right lower lobe. He died on the 25th of March, and we obtained an autopsy, which showed the following:

The body is that of a Mexican man, poorly nourished, head down on the shoulders as if the neck was collapsed.

There is some swelling on the left side of the jaw, which seemed to involve the bone. Examination of the abdomen shows nothing of importance.

Examination of the chest showed lungs clear. Dependent portion of the lung on the right side was consolidated, surface covered with exudate. On section, it was dark red, quite firm.

The neck was opened from behind, and the whole mass of vertebra and base of skull was removed in one piece. The bone was markedly softened, could be cut with a knife in many places. The base of the skull was considerably thickened. It had the appearance of rather firm cartilage with a small amount of calcification. Just how far this condition extended down the spine was not determined, but the whole base of the skull was involved, and after the bases were removed, the petrous portion of the sphenoid bone could be whittled up without any great trouble. The brain itself did not show any involvement.

Grossly, this condition was a new growth, destroying the whole cervical vertebrae and the base of the skull. Apparently osteosarcoma.

Dr. Waite showed lantern slides.

DR. WAITE: This was absolutely restricted to the bones of the neck and the skull, with slight involvement of the jaw. Usually a new growth goes anywhere over the body; this one staid right where there was bone growing. It is a spindle-cell tumor, with possibly some larger cells in it. How can a tumor do this? I have been thinking about it a long time, and all I can think of to fit the case is what we studied about osteoblasts and osteoplasts, one developing bone and the other destroying bone. This bone did not increase in size, the structures remained about normal in thickness. The only way I can see is that we had a tumor made up of osteoplastic cells. If this is a tumor which is growing and producing a physiological effect, it is different from most tumors. We have a tumor here that has destroyed bone, that has not grown much in size, just continuously and progressively replacing the bone. It is a very unusual condition and must be a new growth of the osteoplasts which destroy bone; so to me this is a very unusual tumor. I can't find anything like it in the textbooks, and I think it is rather rare. I have never before seen one like it.

DR. SWOPE: This is rather an interesting case. I was called on to see this case by the Relief Association, and I objected to going; it was in a little outside village. They said it was a tumor of the brain. I went down and found this man as you saw him. His neck was perfectly limber if you would move it, but he had a great deal of pain on movement. I have never been quite satisfied about the growth on the mandible there. We have no report on that mass seemingly growing off his jaw. Whether it is a part of this growth, or of the same histological characteristics, we have no report. Maybe we were so enthusiastic about this condition in the cervical spine that we did not pay enough attention to it.

The question came up as to what the diagnosis was when he got to the hospital. Someone recognized it and looked up his old record. The question came up as to what the condition was. We recognized at once that we had a destruction of bone—whether a luetic infection attacking the bone, or tuberculous in character, which is so common, or whether it was a malignant growth, was the question to be settled. A Wassermann of his spinal fluid under those circumstances should have certainly given us positive reaction if it was luetic in character, but the spinal was negative. The entire absence of any tubercular infection in glands, lymph tissue, or any other part of his body, almost eliminates the tuberculous suggestion. Then we were left with the possibility of some malignant development. This makes me think of the Irishman who was sick. A consultation was called, and one of his friends hid behind the sofa to hear what the doctors all said. When they had gone, Pat went and told the others that they had all agreed on one thing, and that was that when Dr. Autopsy got there he would find out just what the trouble was. Dr. Autopsy was very enthusiastic over this case, and we are certainly obligated to him for explaining this condition.

This last week I found another old Mexican down in South El Paso with apparently a very similar condition. I brought him down and had him x-rayed. His bones were all in place, and a large sarcoma was growing apparently from his jaw. This is a very interesting case.

To understand growths of this kind, it is necessary to review the nomenclature of the subject to some extent. Osteomata are hard tumors developing on bone and composed of new bone growth of osteoblastic origin. Osteomalacia means softening of the bone, due to disintegration of the bone cells and replacement with some less dense material. Osteochondromata, are composed principally of bone and cartilage cells. Osteochondrofibromata contain

the three elements of bone, cartilage, and fibrous tissue.

Sarcomata rarely possess capsules, and therefore produce rapid infiltration in adjacent tissues. This in part accounts for their rapid progress.

Bone sarcomas may attack the periosteum, medullary, and bone tissue itself.

Sarcoma of the periosteum may produce enormous growths, with infiltration into the outer surface of the bone. When the medullary is involved the growth is not so rapid or so large, and the infiltration of the bone is from within outwards.

In some instances, the bone tissue seems to be the starting point, and death of the bone cells and osteoblasts with replacement with spindle cells, takes place. In this condition the process seems to be confined more particularly to the osseous tissue, with little disposition to spread to the adnexae. This would seem to be the case in this instance, since neither the brain and spinal cord nor their membranes in any way macroscopically were involved. There were some symptoms of compression of the intracranial nerves previous to death, probably resulting from the thickening of the occipital and petrous portion of the temporal bone, which was quite apparent at autopsy.

In the history of these growths there is almost always a trauma, often antedating the condition. This man was supposed to have hurt his neck in moving a piano. This is not entirely a new thing to me. Long years of experience and good memory sometimes help us along. In 1891 G. G., a boy of 1, drove some pigs to town. He was riding leg under the mule. He got up off the ground and of 16, drove some pigs to town. He was riding leg under the mule. He got up off the ground and onto the mule and brought the pigs on to town. He complained of great pain in his leg. Within a short time he was brought to me with a little hard swelling in the midportion of the femur. I treated him. Two or three weeks later he reported back and the growth was very much enlarged. I advised removal. It was very hard and was evidently developing rapidly. In a comparatively short time it became as large as my head. I did a hip-oint amputatjion and secured a specimen. The patient lived about six hours after the amputation. On the canal of the bone we found just such a condition as we had in this case. The bone was destroyed entirely, and the specimen sent to the pathologist was reported as a spindle-cell sarcoma. There was an injury to the shaft apparently at the time the mule fell on him, and on this injury was developed the change in character of the bone, with the spindle-cell sarcoma apparently developing in this bone.

This condition is no respecter of persons, age, sex, or conditions. In 1896 a man about 48 years old developed a sarcoma of the lower jaw. His history was that he had had a tooth extracted at that point, and the jaw never got well. It continued to destroy the bone until, when I saw him first. the bone was practically eaten in two. There was a great mass there, and we removed the bone from the symphysis to the ramus. The man recovered thoroughly, but he had only one side of his jaw left and was badly disfigured.

A good many years ago, in the Mimbres Valley, an archeological investigation was made and we dug up a former inhabitant of that section that had a clubbed end of his radius, and it was honeycombed. He had been buried about a thousand years. The bone was in good condition except that there was the club, showing that he had had a growth in the bone. It was about four or five times as large as the bone, but the bone was hard and it looked as though the growth had started in the marrow and ballooned the bone out.

I saw one little child about three years old that had a rapidly growing tumor on the distal end of the ulna, which was removed, and so far as I know the child recovered.

I am satisfied that, in the case of the sixteen-year-old boy who fell with the mule, if I had been allowed to amputate this leg earlier, we might have saved his life, because it seems to hold to the bone itself and not to invade the adnexae. I think that in all probability, when biopsy shows this diagnosis, amputation will save the life of the individual.

DR. MILLER (in absence of Dr. Goodwin who was to have discussed case): Dr. Goodwin's idea was that there were three things that would have to be considered in a diagnosis of this case. Dr. Swope has discussed these, and Dr. Waite has, too, in a measure. This history of course would make you think of a syphilitic process, but in these conditions of the bone, while there is destruction, there is also usually a formative process. Tuberculosis does not usually destroy the bone as rapidly and as completely as this. It seemed that this was more in the nature of a cancer. I think there is a possibility that some relief could have been obtained earlier by x-ray.

Case No. 2. G. L., a Mexican child of 3 years, was brought to the hospital on February 3, 1934, with the following history:

"Two weeks ago the child became ill with fever and malaise. Three days later it broke out with measles. It was apparently recovering from the measles, when it began to have abdominal distention. At the onset of this symptom it was given a dose of epsom salts, which gave temporary relief. When this symptum reappeared, it was given repeated enemas, with fair results at first, and then with no results."

On failure to respond to this treatment the child was brought to the hospital. There have been no other symptoms associated with this condition. The past history is negative, except for measles, mentioned before.

Physical examination showed a poorly nourished Mexican child about stated age, 3 years. He appeared to be apathetic, but did not cry or complain of any distress. Temperature was 100°, pulse 140, respirations 28. The abdomen was greatly distended and tympanitic. There was no rigidity of the abdominal muscles, and no tenderness. No masses

were palpated. The skin of the trunk showed a fading eruption of measles. The rest of the physical examination, including rectal, was negative. The blood count showed 20,000 white cells, with 80 per cent polys. 2 monocytes, and 18 lymphocytes. The urine was normal.

A diagnosis of peritonitis was made and the child was given the following treatment: The first day, repeated soda enemas and turpentine stupes. These enemas were returned with some fecal material. No gas was expelled. Normal saline, 250 cc. by hypodermoclysis twice a day, was given. These measures were continued for the next seven days. No relief from the distention was obtained, and after the first day the enemas were all returned clear. During this time the child seemed to be holding its own in spite of the fact that it received no nourishment; but, on the other hand, it did not show any improvement, and on the seventh day a peritoneal puncture was done; 1 cc. of what was thought to be pus was aspirated. Culture of this fluid showed a heavy growth of small gram-negative bacilli, thought to be coli. At this time, milk and molasses enema through a colon tube was given repeatedly, with practically no benefit. With the colon tube in place, the child was taken to the x-ray room and a flat plate was made of the abdomen. This failed to show anything of importance, as reported by Dr. Waite.

The next day Dr. Stevenson saw the baby, and recommended large and frequent doses of mineral oil. The child was given an ounce and a half of mineral oil every four hours, for three doses. This failed to show up in subsequent enemas. At this time surgical pituitrin was also tried, with no benefit. Upon recommendation of one of the staff, 25 mg. of novocaine was given intraspinally, followed by peristaltine and surgical pituitrin, hypodermically. Following this, a small liquid stool was passed, but no flatus was expelled. During all this time the child ran a temperature ranging from normal to 107°, and there was no vomiting. Since the child failed to respond to any of the treatment mentioned before, it was decided the following day to operate. It was taken to the operating room and under local anaesthesia a small high right rectus incision was made. The intestine was found to be distended with gas, and was of a normal pinkish color. A small opening was made in the small intestine and a rigid rubber tube of small caliber was inserted into the gut and held in place by purse-string sutures. Following operation, the baby began to lose ground, vomited several times, his pulse became very weak and rapid, and at 6:10 the following morning, he died. An autopsy was obtained, and the report is as follows:

"Body is that of a poorly nourished Mexican child with a markedly distended abdomen. There is a recent surgical wound in the abdomen, with a drainage tube.

"Some excess of fluid in the abdominal cavity, and peritonitis around where the drainage tube is inserted. The stomach, duodenum and jejunum are markedly distended, but at the place where the ileum begins, it is normal and there are no signs of obstruction. The colon is large, but not distended, and at the sigmoid there are numerous small ulcerations. The left kidney is dilated and markedly injected, and the cavity is large. The right kidney is also somewhat dilated, but not so much so as the left, and it is not so red. There is some reddening of the base of the bladder.

"On opening the chest, the lungs, especially the lower lobes, are considerably consolidated and deeply injected, leaking blood on section.

"The cause of the intestinal condition is not apparent. The colon is definitely hypertrophied, and there must have been a pyelitis on the left side. with a terminal pneumonia."

Dr. Barrett, who was on the program to discuss this case had been called out.

WHAT EVERY WOMAN DOESN'T KNOW—HOW TO GIVE COD LIVER OIL

Some authorities recommend that cod liver oil be given in the morning and at bed time so as to assure an appetite for the oil, while others prefer to give it after meals in order not to retard gastric secretions. If the mother will place the very young baby on her lap and hold the child's mouth open by gently pressing the cheeks together between her thumb and fingers while she administers the oil, all of it will be taken. The infant soon becomes accustomed to taking the oil without having its mouth held open. Mead's Newfoundland Cod Liver Oil, of minimum acidity and prepared from fresh healthy livers, is well tolerated by infants and children and is palatable without flavoring.

If given cold, cod liver oil has little taste, for the cold tends to paralyze momentarily the gustatory nerves. As any "taste" is largely a metallic one from the silver or silver-plated spoon (particularly if the plating is worn), a glass has an advantage.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil... In cases of fat intolerance the former has an advantage since it can be given in 1-3 to 1-2 the usual cod liver oil dosage.

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the from of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies. Please send for samples to Mead Johnson & Company, Evansville, Indians.

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"HIGHER OBSTETRIC STANDARDS FOR ARIZONA."

At the time of the Prescott meeting of the Arizona State Medical Association, resolutions under the above heading were in the process of preparation by Dr. C. E. Yount, but his illness prevented these from being brought before the Association. In a recent communication, Dr. Yount has set forth the basic factors and the motif for the proposed resolutions, hoping that their publication will accomplish the same purpose.

Some years ago Dr. H. A. Reese of Bisbee-Yuma gave us a very helpful paper dealing with the R. O. P. position in labor. Up to that time our annual programs were usually characterized by a paucity of obstetric subjects. I asked several of our men doing obstetrics if they would, among themselves, be responsible for securing annually for our program at least one good paper on an obstetric subject. One paper annually, read and discussed at our state meeting, would probably not elevate the standards, but it might at least prevent obstetrics from becoming a lost art and the obstetrician from becoming the forgotten man. I am glad to note that we have had one such paper on each annual program since that gentleman's agreement.

But why the resolutions urging higher obstetric standards? During the Public Health meeting which preceded the State Medical meeting, Dr. William P. Shepard, Assistant Secretary, Metropolitan Life Insurance Co., of San Francisco, presented a most illuminating paper entitled "Present Day Opportunities for the Practising Medical Profession in the Field of Public Health." The shaft which I, as an Arizona doctor, could not dodge was his statistical comparison of certain preventable diseases in the registration area of the United States with those of Arizona. Tuberculosis, typhoid fever, the puerperal state and several others were compared. Arizona fared badly when exposed to the statistical searchlight, while the reflections seemed to reach out to city, county and state Health Officers. The next day, when presenting my paper, my reactions to Dr. Shepard's paper led me to digress in these words. "After Dr. Shepard's paper yesterday I am certain that I need not apologize for choosing as my subject 'Prescott's Municipal Water Supply'.' In fact, if you read the writing on the wall you discovered that Arizona has a most unsavory mortality rate. Take, for instance, deaths in the puerperal state, quoting Dr. Shepard; in 1926, the average per 100,000 in the registration area of the United States was 14.3, while in Arizona it was 21.6; in 1931 in the registration area 11.9, still too high according to Paul De Kruif, yet in Arizona it was 17.4. Again, take typhoid fever, one of the "vanishing" diseases in the registration area; Dr. Shepard showed us a continuous and disgraceful mortality in Arizona much above that in the registration area. My deductions led me to express the opinion that unless the medical profession of the State of Arizona, and all others interested in the Public Health, get busy and conduct a campaign of education in disease prevention, and further direct their efforts to destroy the pernicious influence of the cults, Arizona, instead of remaining one of the famed health resort States, will be stigmatized by the sanitarians of this country as a place to keep patients away from.

Returning now to a further consideration of the deaths in the puerperal state; I have not analyzed Dr. Shepard's statistics; I do not know whether our large Indian and Mexican population adds to the mortality rate; I do not know whether the great amount of work done by midwives is responsible for our increased mortality; I do not know whether our sparsely settled areas with great distances from physicians, making consultations difficult and often impossible, add to the mortality rate; I do not know whether it is wholly chargeable to the doctors who practise obstetrics; I do not know whether we are too "progressive" and apply operative obstetrics too frequently to the detriment of our patients; but I

am willing to indulge in a little introspection. Now let me read the indictment from one of our foremost teachers of obstetrics, DeLee; "As was said before, 25,000 women die annually in the United States during child-birth; 6,000 die from infection, 5,000 die from eclampsia, 4,000 from hemorrhage. Of the immense number of wounded we can form no estimate. That a large part of all the misery is preventable is the universal opinion of those who have studied the situation. Why is it not prevented? Because the standards of obstetric instruction and particularly of obstetric practice are very low. Neither the schools, nor the hospitals, nor the profession itself, nor the public, hold the obstetrician and his art in very high esteem. As a result the care of the child-bearing woman is left to the young, the inexperienced, the incompetent, or, indeed, even a non-medical person, the midwife." One of my old chiefs, the late Dr. J. F. Moran of Washington, D. C., (1915) urged a "nation wide propaganda to teach the laity that the long cherished fallacy that pregnancy and labor are physiologic conditions should be abandoned."

If my confreres who practise obstetrics in Arizona will read this "plea," take it seriously and cultivate an obstetric conscience, the resolutions will not be necessary. Our morbidity and death rates in the puerperal state will be lowered. Whether the death rate will approximate that in the registration area I can not say, but our Registrar of Vital Statistics can tell us whether the medical profession of Arizona stands indicted. The analysis of our statistics is with him. Let him answer.

I hope that no one will construe this as a criticism of my confreres. A finer group of medical men can not be found in any state. I speak advisedly. Furthermore, my own obstetric record would not permit me to make an HONEST criticism. I am not an obstetrician. It would simply be a case of living in a glass house. However, years ago, while a hospital interne, I developed an obstetric conscience. It may, unfortunately, have been the type which at times, especially when coupled with ignorance, makes cowards of us all. Still, it has inculcated a desire to accomplish and be associated with the best in obstetrics; to dignify the art of obstetrics as a branch of scientific medicine, requiring at times the highest skill and most mature judgment that can be demanded of any branch of medicine or surgery.

MINUTES
of the
Forty-third Annual Meeting
ARIZONA STATE MEDICAL ASSOCIATION

(Continued from page 270)

that, so far as known at present, no movements are under way which will require great expense. If attacks on the Basic Science Bill are made, this will have to be defended. Dr. Kennedy said that the possible expense should be included in the budget and if the funds were not used, we would still have them. Dr. Harbridge called attention to the item voted, to pay the expense of the delegate to the A. M. A. meeting which would be between $200 and $250. Dr. Kennedy made motion that the appropriation for the Welfare Committee be the same as last year; motion was seconded and carried.

The matter of the expense of delegate to the A. M. A. meeting was discussed, and motion was made by Dr. Harbridge that we put item in the budget of $200.00 for this, and up to this amount can be expended. Motion was carried.

Dr. J. M. Greer presented report of the Committee on Resolutions: The report of Dr. Stroud, National Legislative Committeeman, was read (see).

Motion was made that the program on birth control be approved. Motion carried.

Motion was made that we adopt the regulation regarding radio programs, by the Cook County Medical Society. The resolution was read by Dr. Greer. This motion to adopt was carried.

The resolution regarding the Conference Committee with the Arizona Industrial Commission was presented without recommendation. Dr. O. H. Brown moved that it be adopted; motion seconded. Dr. Leff thought that the members should be appointed in rotation, two for two years, two for four years and two for six years. Dr. Swackhamer thought the present meeting too small to be representative, and the power delegated to this Committee too important for us to act on. According to the resolution the power of the committee would be great and their actions binding on the whole Association. He suggested that the Committee be appointed with power only to advise and counsel with the Commission, and any important matters, such as changes in fee schedule, should be referred to a general meeting of the Association. Dr. Davis thought that there are serious questions as to how this arrangement would work. It might mean that all grievances of the medical profession would be referred to this committee, which might be composed of physicians from any part of the state. No provision is made for any compensation or travel expense. It would be difficult to get them together frequently, and in the meantime grievances would go neglected. It would be difficult to get them to function, if they were forced to go against their friends.

Dr. Palmer stated that the thought of the present commissioners is that such a committee should rotate, the older members holding over, as suggested by Dr. Leff. This idea was not incorporated in the present resolution, because it was thought best to see how the plan would work before making it permanent. It is necessary to have a body of workable size, as it is impossible to deal with the whole profession at once. The idea of the Commission is that the Council would be a cross section of the profession of the state, at least one member from the "self raters" (mining men), and other members from different parts of the state. The Association ought to be able to pick out a committee that their

members will have confidence in. A committee of that sort would not enter into any serious commitments that would compromise the medical profession. If the matter of a fee schedule is to be acted on, the committee would bring recommendations. In order to get it on a workable basis, they must have their own organization and confer with the Commission. With regard to expenses, the present Commission intends to pay the expenses of those men coming from distant points and perhaps a per diem. The experience this committee would gain by the end of their first year would put them in a position to make definite recommendations for the future. So far as the political end goes, if the committee is once established in this relation to the Commission, no change would ever abolish such a committee. Organized like this, the medical profession will have a definite say as to what goes on in the commission. It is contemplated that the members appointed by the president would consist of four, one from the north, one from the central, one from the eastern and one from the southern part; that the president of the Association automatically becomes a member of and chairman of this committee; that the medical referee be an ex-officio member of the committee and act as its secretary. Can assure you that the expenses will be paid to the first organization meeting, at which time the working principles can be formulated and, in conference with the Commission, arrangements made for future meetings. Then, as we go on, perhaps by enlarging the committee's work, and by rotating its membership, we can gain some knowledge from the inside of workmen's compensation.

Dr. Carlson stated that he must disagree with Dr. Palmer in his proposal that he should be ex-officio member of, and secretary of, this committee. At the present time, as medical referee of the Commission, he wields more power than any other man who has held that position. The idea of the committee proposed is to iron out any difficulties that we might have with the Commission—which means with Dr. Palmer. The majority of the industrial work is done by the self contract or self rating men. Perhaps they do not come under the jurisdiction of the Commission as much as the men in private practice, but they also do private work. There should be more representation from the contract men on this committee, and the committee should be absolutely independent of the Commission, if they are to iron out the difficulties we are having.

Dr. Greer stated that this proposal is an overture on the part of the Commission to try to cooperate with the medical profession. Mr. Keener is very sincere about this and is anxious that nothing shall happen to prevent the formation of this committee. The Commission is established by law and they do not have to come to the medical profession unless they want to.

Dr. Watkins recalled the history of a previous conference committee, whose efforts secured a revision of the first Fee Schedule proposed by the Commission. When the committee was asked by the Commission to help them in censoring certain practices, which appeared to the Commission to be wrong, the committee refused to function, and went out of existence. That was a short-sighted policy, because the Commission has since that time gone ahead and developed their policies without further effort to consult with the organized medical profession.

Dr. O. H. Brown expressed his opinion that the committee should be created and be asked to take an active part in developing or revising the medical phases of the Commission's work.

Dr. Palmer, in answer to Dr. Carlson's statements, said that the medical referee has no authority with the Commission and acts only in an advisory capacity. The Commission has recently been taking his advice, but he has no authority. He thinks, like some of the other men, that there should be a medical representative on the Commission, but whether that will occur or not is uncertain. In working with the commissioners, he thinks that they have gradually come to a realization of the importance of the medical treatment and of medical opinion and judgment in estimating disability. The function of the committee will not be to censor the medical work of other doctors. If the committee is asked to pass judgment on a man's disability, he will be taken as he is, without criticism of the doctors who have treated him. With regard to the medical referee and the committee, he should not be looked on as an employee of the Commission in the sense of being employed to carry out their wishes. That is not the situation and the Commission has never suggested such a relation. The idea of making the medical referee an ex-officio member and secretary of this committee was that the clerical work will be considerable and the Commission have provided the medical referee's office with a secretary who can do this work. It is not a matter of getting a wedge into this committee by a representative of the Commission, because he will always represent the medical profession wherever he is. Is not paritcular about it, as he does not expect to be referee much longer.

Dr. Utzinger thought it very essential to have the committee but the resolution gives blanket authority to the committee to do anything. An advisory committee is fine, but an authoritative committee is not. What would prevent the question of censorship of medical or surgical work from coming up? If it should, we could not get five trustworthy men to accept places on the committee. The resolution should be amended by striking out the word "authority."

Dr. Palmer said that this committee is bound to be authoritative as far as the Commission goes.

Amendment to the resolution was offered that the president of the Medical Association appoint four members and that the president of the State Association be the fifth. This motion wa seconded, and on being placed, carried.

Motion was then put on the adoption of the resolution, and this was put to vote and carried.

(The Advisory Committee to the Industrial Commission, appointed by President Clyne, consists of Drs. A. C. Carlson of Jerome, Robt. Ferguson of Bisbee, E. Payne Palmer of Phoenix and R. D. Kennedy of Globe; Dr. Clyne is the fifth member.)

Dr. Orville H. Brown presented the report of the Committee on Economics. He called attention to the April issue of the Bulletin of the American Medical Association, containing an analysis of sickness insurance. He also called attention to the Bulletin of the Michigan State Medical Society, presented in the House of Delegates, in which they recommend mutual health insurance. He read one paragraph from the report of the Santa Cruz Medical Society. Dr. Harbridge moved that the report be received with appreciation for this work and that Dr. Brown and his committee be continued to study this subject further. It is a matter of great importance and so far as observed, there is no satisfactory answer in sight. Motion was seconded and carried.

Dr. Brown stated that the committee would be pleased to have any suggestions and information that would be applicable to any phase of this problem.

The resolution of Dr. Houle was referred to the Committee on Economics for their study and consideration.

Place of meeting for 1935: Dr. Harbridge extended invitation for the meeting to be held in Phoenix. Upon motion this was accepted by unanimous vote.

The election of officers being next in order, the following were nominated and elected without contest, the secretary casting the unanimous vote of the delegates for each officer, in turn:

President-Elect: Dr. C. R. K. Swetnam of Prescott.

Vice-President: Dr. Orville H. Brown of Phoenix.

Secretary: Dr. D. F. Harbridge of Phoenix.

Treasurer: Dr. C. E. Yount of Prescott.

Councilor for Northern District: Dr. N. K. Wilson of Holbrook.

Delegate to the A. M. A. for the years 1935 and 1936: Dr. J. D. Hamer of Phoenix, with Dr. Robt. Flinn of Phoenix as Alternate.

Miscellaneous: Dr. Carlson brought up the matter of the frequency of changes in the superintendency of the State Hospital for the Insane. This position changes with every administration; a new man no sooner gets acquainted and gets the institution running properly and there is a change. We should do something to get this out of politics and have a more permanent situation, which will be better for the patients.

Dr. O. H. Brown said that, speaking from his experience of two years ago, if we went after the candidates for governorship, we could get their pledge to do this.

Dr. Greer said that we could do another thing. We could draft a resolution and present it to the present governor and all succeeding governors, so that incoming officers will know what we think about it. That this office should be a permanent one, the appointment made on merit and the superintendent left in to conduct the institution as a hospital.

Dr. D. M. Davis thought it would be very desirable and a courageous act to take this step. It might be made an essential step in a campaign to secure tenure of office for all technical officers, public health, and so forth. Only in this way can we have efficiency in these offices.

Dr. Leff said that we must all agree with Dr. Davis that it is very desirable to reach this stage. The question is, what can we do? As a medical organization we can do little. As individual medical me we can do a great deal. Not only should we confront the candidates with such a request, that they make no changes without consulting the medical association, but we can also pledge every member of the Association not to accept such an appointment without consulting the Association.

Motion was made, seconded and carried that this matter be referred to the Public Welfare Committee.

Dr. Clyne took this opportunity to thank the Yavapai County Medical Society for the cordial way in which they received and entertained the Association.

Adjournment, sine die.

D. F. HARBRIDGE, Secretary.

(To be concluded next month)

BOOK REVIEWS

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION: Volume 25 (Papers of 1933, published 1934). Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B. A., M. A., M. D. Octavo of 1230 pages with 210 illustrations. Philadelphia and London. W. B. Saunders Company, 1934. Cloth, $11.50 net.

This large volume contains 175 contributions of the Mayos and 217 associates. The list of contributors contains the names of many who are well known as leaders in their special fields of practice and research and they present to you the newest in diagnosis and treatment. These papers cover almost the entire range of medical and surgical practice and are so grouped under general headings that they are easily available for reference. The index of subjects is unusually complete and there is also index of contributors and a bibliographic index; these add greatly to the value as a reference volume.

There is included an "In Memoriam" series commorating the work of Mrs. Maud H. Mellish-Wilson who for 27 years edited the Mayo Clinic publications and was in charge of the Medical Library. The articles give recognition of the "woman pioneer in a new profession, medical editing."

—H.P.M.

NEW AND NONOFFICIAL REMEDIES, 1934, containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan.

1, 1934. Cloth. Price, Postpaid, $1.50. Pp. 510; lx. Chicago: American Medical Association.

New and Nonofficial Remedies, 1934, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichhment of the indexing started a few years ago is continued and its value even increased by some desirable simplification of cross references.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serums contaniing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.

Octozone Not Acceptable for N.N.R.—The Council on Pharmacy and Chemistry reports that the Octozone Corporation of America presented a labile gaseous preparation called "Octozone" and the apparatus ("Electroniseur") for preparing this gas from oxygen by the action of an electrical discharge. The product is proposed for the treatment of a large variety of diseases, in particular various forms of arthritis, by local application, by baths in closed bags, by subcutaneous or intramuscular injection, by rectal administration or by mouth dissolved in water. As the evidence seems to be fairly conclusive that "Octozone" is a mixture of O_2 O_3, the Council decided that no proprietary name for the gas could be recognized, since ozone is not a new discovery, either from a chemical or from a therapeutic standpoint. The Council found the evidence of therapeutic usefulness submitted by the firm unconvincing. It appears that, under the impression that the gas was a new preparation, investigators have used it on patients without preliminary work on animals; at least such work was not reported in the available data. Among the various conditions treated with Octozone are furunculosis, varicose ulcer, fibrositis, ulcerative colitis, sciatica, "rheumatism," subphrenic abscess, osteomyelitis, cystitis, hemorrhoids, and Oxyuris vermicularis infestation. The use of ozone in the treatment of wounds is not new, and according to some investigators it has a field of therapeutic usefulness, although this is very limited. It appears that the intelligent employment of ozone may yet find for it a therapeutic niche. But such use as it has so far received under the name "Octozone," cannot but further discredit the employment of this oxidizing agent in the treatment of disease. The Council declared Octozone unacceptable for New and Nonofficial Remedies because, according to the available evidence, it is the well known ozone marketed under a proprietary name with extravagant, unwarranted and even dangerous therapeutic claims. (Jour. A. M. A., February 24, 1934, p. 605).

Felsol.—According to a brochure entitled "Contribution to the Therapy of Bronchial Asthma," by Dr. M. Kaercher, the composition of Felsol is now given as: Metozin 0.9 (Phenazone 0.25, Anilipyrine 0.4, Iodpyrin 0.24), Caffeine 0.1, digitalis and strophanthus glucosides 0.0015, and the alkaloid lobelia inflata 0.005 Gm. Tests made some time ago in the A.M.A. Chemical Laboratory indicated that the product contained an acetanilid derivative in addition to other products. The substance may be looked on as a shotgun type of mixture promoted in typical "patent medicine" style. (Jour. A.M.A., Febrbuary 24, 1934, p. 60).

Alpha-Dinitrophenol.—A Metabolic Stimulant.—A year has elapsed since alpha-dinitrophenol was introduced into therapeutics as a metabolic stimulant by Tainter and his collaborators of the Stanford University. Considering the potency of the drug, few untoward results or accidents have been reported. The only definite side-action from the therapeutic use of the drug is a skin rash, which occurs in about one out of every fifteen cases. The rash is uncomfortable for a few days and then disappears without sequelae. There have been no deleterious effects observed so far on the kidneys, but rather the contrary. Likewise the liver appears not to be damaged. The introduction of dinitrophenol into therapeutics has aroused widespread interest in metabolic stimulants in general, and in substitutes for this drug, in particular. Already certain British workers are proceeding to test the therapeutic actions of a related cresol. No information is at hand on the frequency of undesirable effects from this cresol, nor is its clinical toxicity or efficiency established. Therefore the dinitrocresol is still in the experimental stage and not ready for general therapeutic use. In contrast, the past year's experience with dinitrophenol has shown it apparently to be a relatively safe and reliable metabolic stimulant with which the practitioner may obtain therapeutic results. This does not mean that dinitrophenol should be given to every obese patient. In those cases in which diet has failed and thyroid is either not needed or not tolerated, dinitrophenol may be used with good prospects of benefit. However, this agent must be used only under carefully controlled conditions and with due regard for the

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possibility that more extensive use may bring to light as yet unsuspected toxic effect. (Jour. A.M.A., February 17, 1934, p. 542).

K-M Infra Red Ray Lamp, Table Model No. 630, Not Acceptable.—The Council on Physical Therapy reports that the Infra Red Ray Lamp, Table Model No. 630, manufactured by the Knapp-Monarch Company, Belleville, Ill., resembles a reading lamp in outward appearance, the difference being that an electrical heating element takes the place of an electric bulb. The element draws about 300 watts on a 110 volt circuit on either alternating or direct current. The Council finds little difference, if any, in therapeutic effect between this infra-red ray lamp and an ordinary bathroom heater. The advertising lists thirty-one so-called "Common Ills" for which there are given suggested methods of treatment. Among other misleading indications for the therapeutic use of infra-red rays, the firm lists the following diseases: angina pectoris, asthma, biliousness, heart disease, itch and delayed menstruation. The Council is not in possession of critical evidence to support these unwarranted suggested indications for the therapeutic employment of infra-red radiations. Promotional advertising matter of this kind in effect constitutes an appeal to the public with arguments that are unscientific and may harmfully promote a feeling of false security on the part of the public. The Council on Physical Therapy declared the K-M Infra-Red Ray Lamp, Table Model No. 630, unacceptable for inclusion in the Council's list of accepted devices. (Jour. A.M.A., February 3, 1934, p. 372).

Nutro Not Acceptable.—The Committee on Foods reports that the Nutravena Company, Battle Creek, Mich., submitted a cooked mixture of roasted peanuts, wheat gluten, and sodium chloride (proportions not known) called "Nutro. A Highly Nourishing Nut and Grain Food." The advertising unjustifiably ascribes special health values to this ordinary peanut and wheat gluten mixture and falsely alleges that it is more nourishing and "healthier" than meat and that meat is harmful, producing "pimples or facial blemishes," containing poisonous bacteria . . . uric acid . . . and ptomaine poison." It is incorrectly described as containing "choice nut meats and full cereal grains." The product is not "rich in vitamins" (implying all the vitamins) or "all body-building essentials." The company advised in a general way that new advertising would conform to requirements of the Committee and that it is not its "desire to put misleading advertising out to take advantage of the gullible and uninformed." The new label for the product, however, carries the claims given above. No descriptive statement identifying the ingredients of the product accompanies the trade name. The company has ignored requests that it demonstrate that its present advertising complies with the requirements of the Committee. This product will therefore not be listed among the Committee's accepted foods. (Jour. A.M.A., Febrbuary 10, 1934, p. 456).

Dinitrophenol Poisoning.—Two more case of sudden death from poisoning with dinitrophenol have been reported in The Journal, April 7, 1934, p. 1141; ibid, p. 1147. The authors review the available literature on the subject, which would seem to indicate that the drug is treacherous and that its administration, as has been previously emphasized in The Journal, should invariably be under the control of a physician. As is usual with any drug

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A. D. Long, M. D.
Medical Director

used for cosmetic purposes, commercial interests have promptly entered the field of exploitation of dinitrophenol. There is not the slightest doubt that vast numbers of people are taking this preparation both with and without the advice of their physicians. Physicians who administer the drug to their patients should inform them thoroughly concerning such dangerous manifestations as increased temperature, severe urticaria and pruritus, and recommend immediate discontinuance of the preparation on the appearance of any symptoms of this character. (Jour. A.M.A., April 7, 1934, p. 1156).

VENEREAL DISEASE INFORMATION

For a number of years the U. S. Public Health Service has been publishing, for the information of physicians, health officers, and others, a monthly abstract journal known as "Venereal Disease Information." This publication contains usually one original article on a subject of general interest in connection with the venereal diseases and numerous abstracts from the current literature pertaining to these diseases. In the preparation of this abstact journal more than 350 of the leading medical journals of the world are reviewed and abstracts made of the articles on this subject.

The cost of "Venereal Disease Information" is only fifty cents per annum, payable in advance to the Supernitendent of Documents, Government Printing Office, Washington, D. C. It is desired to remind the reader that this nominal charge represents only a very small portion of the total expense of preparation, the journal being a contribution of the Public Health Service in its program with State and local health departments directed against the venereal diseases.

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GROCER:
Certainly. What brand?
MOTHER:
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PRE-OPERATIVE PREPARATION AND POSTOPERATIVE CARE

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(Read before the Forty-Third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7-9, 1934.)

PRE-OPERATIVE PREPARATION

The standardization of our present-day surgical technic is the result of a careful study of end results. Such men as the Mayos, Judd, Crile, Coffey, Lahey. and Lynch, have contributed their part to the success of surgery by simplifying elaborate procedures. This undoubtedly has decreased surgical mortality, which is still too high; but there are other means whereby the safety of the patients requiring surgery may be further assured, such as proper preparation of the patient before operation.

In order to protect the vital functions of life, we must know what injury has been sustained from the surgical ailment involved, as well as the damage from other diseases. Complete history and physical examination are keystones to surgical safety. The presence of oral sepsis may give rise to postoperative parotitis; cardiospasm and pylorospasm will often result in troublesome nausea, vomiting, and gastric dilation. Colitis, constipation, hemorrhoids, and fissures, all contribute added discomforts following operation.

The examination of the cardiovascular system should include, not only the physical signs as revealed by inspection, palpation, percussion, and auscultation, but also the study of functional capacity as revealed by the x-ray and the electrocardiograph.

Operations on anemic or cachectic individuals are preceded by blood transfusions. These not only fortify, by actual addition to the blood volume, but, in some instances of increased bleeding and clotting time, will eliminate another danger of hemorrhage.

In known bleeders pre-operative administration of calcium or intramuscular injection of sodium citrate solution shortly before the surgery, may attain the same end.

While syphilis does not contra-indicate surgery, it should be treated before an elective operative procedure is instituted.

The kidney-function test and non-protein-nitrogen estimation, in addition to complete urinalysis, will indicate renal reserve. Diabetes is not infrequently discovered by routine observations of patients under study for obvious surgical conditions.

The obese individual should be placed on a reducing diet, but this must contain the protective foods to avoid calcium depletion and avitaminosis.

While the above analysis may be sufficient to assure the surgeon that the average patient is a good risk, certain conditions call for a more extensive pre-operative preparation. In toxic disease of the thyroid gland, repeated observations of the basal metabolic rate, the administration of iodine as Lugol's solution, together with adequate sedative treatment, carried out under absolute bed rest, have yielded gratifying results both in lessened mortality and smoother convalescence.

When extensive gastric resections or gastroenterostomies are contemplated, the surgery is preceded by greatly increased fluid intake, perferably carbohydrate in character. This is accomplished, not only per oram, when possible, but by transfusion of whole blood, or by intravenous administration of glucose solution.

Gallbladder surgery has been considered an

emergency, when in reality few conditions of this organ require immediate laparotomy.

Of the intra-abdominal emergencies carrying a high mortality, where the essentials of proper pre-operative safeguards are neglected, surgery on the biliary tract stands almost at the head of the list.

The jaundiced patient requires glucose, fluid volume increase, and rest, in order to combat toxemia incident to diminished liver function, and actual parenchymatous destruction.

One need hardly mention the value of the flat x-ray film in early diagnosis of intestinal obstructions. In the colon the thin barium enema followed by air insufflation enables the roentgenologist to diagnose hitherto unsuspected lesions of the lower bowel. The routine use of x-ray examination in so-called chronic appendicitis has often shown a diverticulosis or diverticulitis undoubtedly more productive of symptoms than the appendix.

It is encouraging to observe the hospital preparation of the patients for surgery, as compared to former years. There has developed a better understanding and a keener appreciation of the dangers of dehydration acidosis and alkalosis. The surgeon has consulted the physiological chemist and the internist, and his results are improving.

There is also a trend to reduce to a minimum the indications for emergency operations. The acute appendix and the ruptured viscus stand alone in the long list of lesions previously thought to indicate immediate laparotomy.

In partial intestinal obstruction, due to inflammation or growths, the fecal current is being sidetracked past the involved area, to allow for recuperation from the primary insult of toxic absorption. Two-stage and three-stage operations on the obstructed alimentary tube are replacing the extensive primary resections formerly performed. This is doing today for intestinal surgery what the two-stage prostatectomy has done for urology.

Ligation of the thyroid arteries to make possible a later thyroidectomy, and preliminary colostomy in carcinoma of the rectum, are further examples of conservatism in surgery.

POSTOPERATIVE CARE

The postoperative care of the patient should not be relegated to those inexperienced in the complications of surgery. Certain routine orders are essential to make up the framework of postoperative treatment. However, the individual patient requires individual treatment.

For the past three years we have used carbon-dioxide therapy following inhalation and spinal anesthesia. The patient takes eight or ten inhalations until deep breathing is evident. This is repeated every four hours for the first two days, thus ventilating the lower portion of the lungs which ordinarily are potential sites of hypostatic congestion. Our respiratory complications in the last 500 laparotomies have been less than 3 per cent, where formerly they were as much as 25 per cent.

All patients are given tap water by continuous proctolysis for the first 48 hours. Where the individual does not absorb at least 2000 cc. in the first 24 hours, a hypodermoclysis of 1000 cc. of normal saline is given the morning following operation. The urine is examined for acetone and diacetic acid the first three days postoperative. If acetone bodies appear in the urine 1000 cc. or more of 10 per cent glucose in Ringer's solution is given. This is repeated as indicated.

As soon as nausea has subsided, the patient is allowed warm tap water. Tea and broth are given the second 24 hours. However, if nausea or vomiting should ensue, all fluids by mouth are stopped and allowance is made for the reduced intake by rectal and intravenous administration. Dehydration and acidosis should be guarded against, postoperatively as well as pre-operatively. Soft diet in small amounts may be given on the third day but only when evidence of acidosis, nausea, and epigastric distention, are absent.

Morphine, or one of its derivatives, is given up to a grain in the first 24 hours, in one-quarter or one-sixth grain hypodermic doses. More than two or three one-sixth grain tablets are seldom necessary during the second twenty-four hours. It is most essential that the patient is relieved of pain and apprehension during the first two days. The fear of intestinal paralysis as the result of morphine is hardly warranted in the light of the work of Wagenstein and others. Luminal, after forty-eight hours, in one-half to one-grain doees can be relied upon to control restlessness and distress. For sleep a larger dose of a grain or a grain and a half is used.

Cathartics are given, on the third postoperative day, omitting from the count the day of the actual surgery. This treatment consists, as a rule, of castor oil in adequate dosage. The exception to this rule is surgery on the biliary tract where the laxative is not given before the fifth day. The rectal tube is used from the start and enemata are given after 48 hours. If upper intestinal distention from gas is troublesome, we have frequently given peristaltin, a glucoside of cascara, in one or two ampule doses intramuscularly. This may be repeated in three or four hours and helps to reestablish the peristaltic gradient before an orally administrated physic is tolerated.

In general, postoperative distention of stomach, intestines, and urinary bladder produces many of the untoward symptoms.

Thrombophlebitis, too, sometimes adds its distress to convalescence. We have been encouraged in limiting its extent and hastening its resolution by the use intravenously of one grain of sodium thiosulphate daily for three days and repeated after a day or two interval. Distention of the stomach during the first three days is frequent and must be recognized and remedied promptly. The Levine tube is passed through the nostril to drain the stomach, and may be left in place two to four days. Connected to a Connell or other suction device, it allows of drainage or lavage. Fluids or medicine may be administered through it or the patient may swallow them alongside the tube.

Because of the frequence of gastric dilatation following gallbladder and gastric operation, we resort routinely to this procedure in such cases as soon as the patient reacts from the anesthetic.

It seems evident that keeping the stomach empty prevents ileus of the upper intestine as well. Most intestinal paresis is mechanical and persistent abdominal distention with an empty stomach warrants investigation of the cause. Paralytic ileus may be distinguished from mechanical by administration of intravenous hypertonic saline solution or by spinal anesthesia, either of which will relieve the former but not the latter. The flat x-ray film assists materially in the diagnosis by showing the presence of gas in the small intestine in the case of obstruction. This valuable aid often allows early diagnosis and surgical relief.

The care of the urinary bladder requires routine catheterization every eight to twelve hours, using a glass catheter for females, provided the patient cannot void. Voiding of small amounts frequently calls for catheterization. This may demonstrate a distended bladder with the overflow of small amounts. Post urinary catheterizations will soon reduce the volume of residual urine.

Pyelitis and cystitis may be minimized by prophylactic administration of urinary antiseptics, such as serenium or ambazin. When established, these complications have yielded to a ketogenic diet, which establishes a high acidity, with daily intravenous administration of methenamine. We use one ampule of uritone equivalent to 31 grains of the drug.

The uninfected operative wound is dressed the day following the surgery and again on the third day, when any suspicious areas are probed for serum retention.

Clips are removed on the fifth or sixth day and deep retention sutures on the tenth.

Ordinarily laparotomies are allowed out of bed on the eleventh and home by the fourteenth post-operative day, if temperature and pulse are normal. Bed posture, except for hernias and perineorrhaphies, is a Fowler position with slightly flexed knees. The patient is turned frequently, and, when able, is encouraged to move about in bed.

SUMMARY

1. In addition to operative skill, successful surgery depends on proper preparation of the patient and adequate postoperative care.

2. A careful analysis of symptoms and physical findings often reveals pathology remote from the surgical problem. Failure to recognize such other pathology may increase complications as well as mortality.

3. Fewer emergency operations on elective surgical conditions will reduce mortality.

4. We have recently studied 1700 laparotomies, performed in our Clinic, consisting of 300 gallbladder operations, over 600 hysterectomies and 800 appendectomies. There has been a gradual reduction of mortality and morbidity because the patients are better prepared before and better treated after their surgery.

PATHOLOGY OF PULMONARY TUBERCULOSIS, ITS RELATION TO CLINICAL MANIFESTATIONS, COURSE AND THERAPEUTICS

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(Read before the Maricopa County Medical Society, at Phoenix, Arizona.)

The terminology of many types of this disease is confused, divergent interpretations of essentially identical processes are not yet reconciled; which probably in part account for a lagging tendency to accept the more modern and simpler conceptions of cellular reaction to the invasion of the tubercle bacillus.

The probable or indicated course which such pathological reactions may take, constitutes the basis of the clinical judgment, and indicates the therapeutic aid required.

Some degree of orderly conception of these processes is desirable and their association with the clinical manifestations is necessary in order to avoid confusion.

In this somewhat academic resumé, some of the more salient points will be reviewed; namely: tuberculous invasion, path of entry, primary focus, location, cellular reaction thereto, evolution, and course of further invasion. Also there will be simpler classification of these processes into two main pathological and clinical types, description of the histopathology, and the difference of each, and, finally, the clinical application of the above facts.

This subject in its chronological order, leads, first, to a discussion of the path of invasion in primary pulmonary tuberculosis. While the hematogenous primary deposit of tubercle bacilli in virgin tissue undoubtedly occurs, there is little pathological evidence to support this view in any large number of cases. This is likewise true of the lymphogenous deposit at the primary site of invasion.

On the other hand, there is much evidence to substantiate its bronchial or pneumonic origin.

The primary invasion of lung tissue, such as would be seen in previously uninfected children or adolescents, by tuberculous implantation, has been demonstrated as being in the bronchial tree near the pleura, and not, as formerly taught, at the apex, but below it. This process is rapidly transmitted along and by the wide-open lymphatic channels to the tracheobronchial lymph nodes. In these glands occur rapid pathological changes, to be mentioned later.

Evidence of the primary nature of early reactions to tuberculous invasion, is not lacking. The characteristic picture of such a primary focus seems to be that it is an area of bronchopneumonic exudation which, even though it may undergo resorption or retrograde changes, still leaves the essential lung structure unchanged. It differs in this quite materially from the productive type of reaction, as will be described later.

The lymph nodes draining this primary area show also a typical reaction in that they caseate early and completely, with a well-defined capsule; this again differs from the productive or secondary types, which are slower in their reaction, show more fibrosing, with more tubercle formation, especially in the periphery. In these lymph nodes there is also the distinguishing feature that the essential lymph-node structure and reticulum are not much changed in the primary or exudate lesion; while, in the secondary types, there occurs marked cellular proliferation, with actual destruction of the reticulum and lymph tissue by hyaline degeneration and necrosis.

"The lung is very abundantly provided with intra-lobular, interlobular, peribronchial, circumvascular, and subpleural lymphatics, whose trunks communicate with the peribronchial lymph glands, and, often enough, tubercles make their appearance along the course of all the channels." (Ziegler.)

The selectivity of the tubercle bacillus for lymphoid tissue, its marked activity in these tissues, its extension along and by way of these lymph channels, and again its renewed activity in the lymphatic glands, especially in pulmonary tuberculosis, are all factors to be definitely remembered in this field of work. The primary bronchiogenetic area involved may resolve, heal, and leave no clinical trace of its existence, especially in children and adolescents, despite the fact that the process may have already passed on and invaded the

lymphatic system, where it may remain active.

It has been held demonstrable (Pinner) that when the tracheobronchial glands show tuberculous lesions, an actual lung lesion can be found in the region which these lymphatics drain.

Ghon (Pinner) states that the "lymph nodes frequently show active disease regardless of the anatomical condition of the primary focus."

The essential characteristics of the cellular reaction to primary tuberculous invasion, are those of "primary infection and of primary infection only." (Pinner.)

Quite contrary to the interpretation and teachings of the earlier investigators, the usual locale of the primary focus is, as stated, not in the apex, as they thought, but almost subpleural and said to begin as a bronchiolitis just at the juncture with the alveoli. In other words, contrary to earlier teachings, the poorly aerated apex is not the seat of primary focal infection, which is really below the apex, in the best aerated portion of the lung, probably considerably lower than two centimeters below the peak of the apex, as has been stated.

Quoting Ziegler: "In adults" (that is, previously infected, therefore not primary types) "the primary foci of pneumotogenous tuberculosis are situated at the apex. In children (that is, not previously affected) no particular part of the lung is more likely than others to be affected."

In other words, more recent investigations have shown that the so-called primary apical involvement is actually a secondary focus, and a quite well-advanced one at that, with a possibility that the original primary reaction is long since resorbed, healed, and "even sterile." (Opie.)

"The foci sometimes, and this more especially in children, have the appearance of ill-defined patches of bronchopneumonia" (that is, the exudative type) "with cellular exudation that presently becomes caseous; in other cases, chiefly among adults, the foci take the form of rounded, fairly well-defined nodes with a caseous center. In the course of time these nodes may become more or less completely encapsulated by proliferous growth of fibrous tissue around them.

"Moreover, frequently, however, when no such encapsulation takes place by the formation of fibrous tissue, the process of cellular multiplication and infiltration continues to extend from the peripheral parts of the primary node along the contiguous interalveolar septa.

"Fresh tubercles develop in the immediate vicinity of the primary node, as well as in the lymphatics, plainly showing that the tubercle bacilli spread by way of the lymph channels.

"In children, the process usually advances rapidly, the primary tuberculous focus soon undergoing caseous degeneration, while tubercles appear along the course of the various lymph channels. The bronchial glands are nearly always attacked at an early stage and become caseous, as soon as a primary lesion."

Old caseous foci may rupture into the bronchi and, by aspiration, cause small or widespread dissemination of the tuberculous process. Sudden, acute exacerbations have, after violent physical exertion, been known to start from latent foci in this manner.

Large areas of infiltration, "diffuse and ill defined," directly due to massive or virulent types of bacilli, may result from such methods of dissemination.

"The course of such secondary bronchopneumonia is generally as follows: An exudation abounding in cells is pressed out and the irritated tissue becomes proliferous and speedily caseates."

"The lung tissue around the nodule is the seat of an exudative inflammation, whose intensity naturally differs in different cases. As a rule, the neighboring alveoli contain first extravasated liquid and leukocytes, desquamated epithelium, and often fibrin; the alveolar septa are partially infiltrated with small round cells of the exudation type."

Stengel: "More commonly, tubercle bacilli are inhaled in a state of extreme dissemination and are not arrested until they reach the point of division of the terminal bronchiole into the alveolar passages." In other words. the first manifestaiton is a bronchiolitis at the atrium of the alvelous. Probably as a consequence of this bronchiolitis, there results an atelectasis of the alveoli beyond the area of involvement. Following this, due to a change in the pressure, there is an exudate thrown out into this atelectatic area, which accounts for the physical signs to some extent found in

these lesions, and also is a possible cause of the fan-shaped areas which are found upon fluoroscopy and x-ray. However, such changes are obviously secondary to the primary invasion of the bronciole.

The course of these processes is quite different, therefore their clinical recognition is important, since therapeutic indications are obviously based upon the implied further pathological activities.

A case of an adolescent or child with the exudative type of lesion predominating is one thing, while that of an older person in whom the productive fibrous type predominates is quite another, the former necessitating almost invariably quick surgical interference.

In cases showing mixed lesions, exudative and productive, it is important to work out whether the former is the type of extending lesion, or the latter. The trend of the case depends largely upon this factor.

As previously stated, the exudative type may be vicious in the rapidity of its invasion, destruction and excavation—that is, a malignant type of tuberculosis; or, in its ability to resorb and resolve, it may be the most kindly type of tuberculosis with which we have to do. In either case, it can be dramatic in its clinical manifestations.

The question as to allergic individual reaction of patients or the degree of tolerance of any given individual to tuberculosis toxemia, is a big one, and its answer probably points the course which the cellular response will take to a tuberculous invasion.

One fact may always be depended upon: that if we find a pulmonary lesion, by any means or method of examination, there is always a far greater area affected, as considered from the pathologist's view, although this may not be clinically demonstrable.

Throughout the literature of many years, pathologists, as stated, have described, in the main, two types of tuberculous lesions—first, the exudative; second, the productive—essentially different cellular reactions with distinctly different chronological occurrence, exudative and cellular arrangement and evolution. Both may, and often do, exist coincidentally in the same individual, giving a complex picture. Therefore it is necessary to remember that no one type of pathological process always continues uniformly, as such. Other types may co-exist and give an endless variety, not alone of the histopathology present, but also the clinical manifestation thereof. Incidentally, should be added the fact that there are greatly varying individual allergic and immune reactions to further modify the tissue changes taking place.

Furthermore, the exudative may be followed by the productive type, and the productive type may extend by the exudative process, but cannot be replaced by it. While recognizing the morphology of both types, the earlier pathologists failed to place the proper interpertation or clinical significance to them; especially was this true of the exudative type. Apparently this gap between pathological knowledge and clinical interpretation was not bridged until worked out by the clinicians, roentgenologists and phthisiopathologists, more recently.

THE COURSE IN THE EXUDATIVE TYPE OF LESION

This may be described as similar to a pneumonia or edema, infiltrating or "pressed" into the tissues of the lung—particularly the reticular structure and alveoli, or air spaces—the exudate consisting of serum (plasma) and cells.

"The exudative lesion is essentially not new tissue but an exudate." The lung parenchyma, elastic fibers, vessels and bronchi are not disturbed, that is, destroyed; in other words, this tissue is not neoplastic, so to speak, in that it does not replace lung parenchyma. The cells consist of granulation epitheloid, lymph and leukocytic cells, usually with no giant cells, and it is these cells and not the lung structure, which liquefy and may be resorbed or caseate.

In the productive type there develops what might be compared to a nonplastic, true tissue growth, consisting of lymphocytes, epitheloid cells, leukocytes, and giant cells, which destroy and replace all types of parenchymatous and interstitial lung structure, leaving no elastic tissue fibers in the area of necrosis. In other words, it is, in every phase, a destructive invasion of contiguous tissue "often halted only by the product of its own activity, that is, the fibrosis of its primary granulation cells, in capsulation."

"In the experimental primary infection by intratracheal methods, the air spaces have been

found filled with exudates, the alveolar walls infiltrated with fluid; there are no giant cells, no granulation tissue—in brief, no sign of productive inflammation."

The course (evolution)) of these two types of lesion may be described as follows:

(1) The exudative lesions (a) may resorb or resolve, similar to a pneumonic process; (b) they may caseate, then encapsulate, inspissate, and calcify; or, from caseation, they may rapidly cavitate; (c) short of cavitation, there may be no loss of structural identity in the lung parenchyma, in this type of lesion.

(2) Productive lesions. (a) Resorption is questioned, even said never to occur, thus differing radically from the exudative type of lesion; (b) they may encapsulate, fibrose, undergo hyaline degeneration and then calcify; (c) they may caseate, inspissate, encapsulate and calcify; (d) following caseation, the caseous mass may liquify and then excavate.

The difference, then, between these two may be outlined as follows, according to Aschoff's classification:

EXUDATIVE

(1) May resorb.
(2) Primary or marked fibrosis lacking; the capsule is narrow and ill-defined.
(3) Does not destroy parenchyma, even in necrosis, the newly formed granulation cells only being destroyed.
(4) Encapsulates or liquefies rapidly (caseates).
(5) Acute ulcerative type, or sequestrating.

PRODUCTIVE

(1) Does not resorb.
(2) Tendency to marked fibrous changes, especially in encapsulation, even though future extension capsule may break through.
(3) Destroys parenchyma, intra-alveolar septa, etc.
(4) Indurates more slowly, or caseates with cellular proliferation.
(5) Chronic ulcerating and chronic cavernosing.

In no sphere of clinical work is a clear conception of the pathological course of tuberculous activity of more vital importance than in work among children.

Until it is far more widely appreciated than now, and until the attitude of complacent ridicule of a large body of physicians to our well-founded apprehension of the morbidity of tuberculosis in children changes, great harm is being done by failure to recognize tuberculosis in these early manifestations.

Tuberculosis is widespread in children. We might expect a positive von Pirquet in children at twelve years of age or under, yet disregard all manner of clinical evidence of actual active disease, and to a greater extent the indicated evidence of less tangible clinical form. Failure to find adequate pathology to explain a hypernormal temperature, asthenia, anemia and pallor, anorexia in sub-par children, should place the burden of diagnosis on proving an absence of tuberculosis, rather than its presence. The hilum glands, the peritoneal and abdominal chain of lymphatics, should be under suspicion; the cervical, axillary, supraclavicular chains can be too obvious, if sought for, to need comment; the pulmonary lymphatic channels in children are known to be relatively large and more patent, consequently more adapted to rapid transmission of tubercle bacilli and their products.

Again, parenchymal lung lesions can be found far more frequently, when persistently looked for, than is supposed, in this type of patient.

In so far as these changes may be slight and passing in character, physical signs may, too, be evanescent and found only on repeated examinations; yet the invasion, or bronchiogenetic deposit may have passed from the original focus at the margin of the lung parenchyma, leaving no trace there, into the lymph channels and seriously invade the hilum lymph nodes. This has been repeatedly confirmed.

For many years I have felt that the hemic and many puerile heart murmurs were due to pressure of the tracheobronchial lymph glands on the pulmonary veins. It has been demonstrated experimentally that very slight pressure on these veins produces similar sounds to those found in the puerile or hemic murmurs in humans.

SUMMARY

1. Pulmonary tuberculosis has pathologically two main types, (a) exudative, and (b) productive.

2. The exudative type is an infiltrating, edematous process, essentially not destructive.

3. This may act benignly and undergo resorption; or it may act malignantly and undergo rapid caseation and cavitation. It is the cellular reaction found in the primary invasion.

4. The productive lesion is slower, more destructive (in that it replaces normal tissue),

cicatrizing, practically never capable of resorption.

5. The primary lesions are sub-apical, near the pleura at the junction of the bronchiole with the alveolus, spreading rapidly into the lymphoid tissue along and by way of the lymphatic system into the tracheo-bronchial lymph glands, especially in children, where lymph channels are wide open.

6. Apical lesions are secondary, even though the primary focus may have healed.

7. Tuberculosis is very prevalent in children. They are quite resistant to actual pulmonary involvement, but the tracheo-bronchial glands are often affected.

8. The exudative types are clinically recognizable, demand constant and close observation and, in all likelihood, early surgical interference.

PROCTOSCOPY AS AN AID TO DIAGNOSIS

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(Read before the Forty-Third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7-9, 1934.)

Diverse pathological conditions of serious import occurring in the rectum and rectosigmoid demand a most complete investigative and diagnostic procedure by endoscopy. The comparative ease and simplicity with which such examination can be made, leaves no excuse for the physician in failing to know the status of the lower bowel which he may be treating. Proctosigmoidoscopy gives such definite and conclusive information that its use is indispensable. Special training is not required. It is here proposed to relate briefly the method of examination and to bring out some of the diagnostic points readily obtained.

The average patient who has been proctoscoped before, or who has heard of some other such unfortunate individual, is unnecessarily apprehensive. The examination can be done with little or no discomfort when properly carried out. In the presence of marked anal irritation or spasm from rectal fissure, ulcer, thrombotic hemorrhoid, or of stricture of the anorectal region, it should not be attempted without regional anesthesia, local infiltration, or painting the fissure or ulcer with 10 per cent cocaine solution. Because of the danger of perforation, general anesthesia should never be used during proctosigmoidoscopy when bowel pathology is present. However, it is permissible with the anoscope. Several perforations have been reported and have usually occurred when general anesthesia had been induced. A cough or a struggle may produce disastrous results, because the great difficulty of locating the perforation by abdominal approach makes fatal peritonitis the inevitable ending.

The preparation of the patient is slight. Some proctologists prefer not to disturb the bowel by the previous use of cathartic or enema. In the main the most satisfactory method seems to be the administration of a 1½ pint to 1 qt. cleansing enema of saline or tap water, two to three hours prior to the inspection. Giving the enema this length of time before, insures all the water being passed and at the same time allows the accumulation of material for examination. A great deal of care and consideration is necessary in handling the subject. Apprehensiveness is lessened by assistance and reassurance and avoiding undue exposure. An intelligent, courteous nurse should be constantly in assistance. Attention to these things facilitates completeness with which examination can be made.

Of the various positions advocated, individual preference of examiner and ability of the patient to assume, decides which is to be used. Other things being equal, the inverted position with proper support is the most satisfactory, because it allows the intestines to drop away from the pelvis. The knee-chest, or knee-elbow position is the next best. Right and left lateral positions are comfortable and must be used when the infirmity of the patient demands. With the latter position, a complete visualization of the rectum is difficult and not always possible. The inverted and knee-chest positions have the further advantage of preventing fluid and secretions from running out the scope. The amount of air inflation required in the inverted and knee-chest positions is less, due to the negative pressure produced in the bowel. Since air pressure is the main source of discomfort, as little as possible should be used and the bowel

should be allowed to empty of air before the instrument is removed.

It is usually desirable to use a short anoscope before the longer 25 cm., or in some cases 35 cm., tube is used. The apparatus should be well illuminated and equipped with bulb attachment for inflation and with magnification. Digital examination is done first to determine the tonus of the sphincter and any pathology within reach of the examining finger. This is a necessity because it is frequently difficult to visualize the rectal ampulla in the hollow of the sacrum. Insertion of the scope is done first in the direction of the umbilicus and then posteriorly on passing the sphincter. It is unwise to insert more than 3 to 4 cm. before removing the obturator and proceeding by direction of vision. It is desirable now to proceed slowly cephalad, following the course of the bowel, and inspecting every segment, particularly posteriorly low down, which part is not often visualized. Examining as the scope is advanced obviates the confusion of traumatic bleeding with real pathology. Swabs and spoons are used to obtain material for examination and culture.

Force should never be used in proctosigmoidoscopy. Variation in mobility and curves of the bowel is notable and fixation is usually quite marked at the rectosigmoid juncture. Perforation may occur without severe pain, and pain then is not a safe index as to whether damage is being done or not.

The multiplicity of lesions to be encountered varies from hemorrhoids to far advanced malignancy. Negative findings are of inestimable value and the examiner should acquaint himself with the appearance of the bowel and its mucous membrane when it is normal.

The frequency with which rectal discomfort and rectal bleeding from malignancy is self-treated, or taken care of by charlatans, or by well-trained physicians as innocuous hemorrhoids, is appalling. Hurst[1] states: "I have seen numerous cases which had been treated for months as colitis, in which the sigmoidoscope revealed the presence of a new growth." Carcinoma[2] of the rectum occurs as 4.3 per cent of all carcinoma in the female, and as 7.5 per cent of all in the male. There is great disparity of opinion in the literature regarding the location of growth in the rectum or sigmoid. Accepting[3] the reflection of the peritoneum as the dividing line between sigmoid and rectum, and considering one inch to each side as the rectosigmoid juncture, 100 cases analyzed at the Mayo Clinic were as follows: sixty-nine rectosigmoid juncture, twenty-nine in rectum proper, and two in the anal canal. These figures also teach that, although important, digital examination is not conclusive. Lahey[4], in 154 consecutive cases of carcinoma of the colon, found the percentage of distribution to be: cecum 9.03, ascending colon 3.2, hepatic flexure 3.2, transverse colon 3.8, splenic flexure 2.5, descending colon 5.1, sigmoid 13.5, rectum and rectosigmoid 58.7. In 88 per cent of the cases in rectum and rectosigmoid, the lesions were shown by proctosigmoidoscopy. Lahey makes a plea for more frequent fluoroscopy with barium enema. It might be said, however, that fluoroscopy is not adequate to disprove malignancy of the lower colon. The difficulty here of visualizing particularly the smaller lesions, because of overlapping of the segments and the inability to manipulate by palpation, must be recognized.

Digital examination with a full sweep of the finger, fluoroscopy, and proctoscopy, insure precise information concerning any pathology present in the lower segments of the bowel. Further up in the colon it is legitimate to depend on x-ray.

The appearance of carcinoma is so characteristic that it should rarely be confusing even to those who have had relatively little experience. Any single lesion, whether an excavating ulcer or a proliferating mass, should be regarded with suspicion. A single lesion is almost pathognomonic of carcinoma, since almost any other pathology will be accompanied by some inflammatory reaction. In carcinoma adjacent tissues appear remarkably normal. Questionable cases should be biopsied. With regard to surgery to follow, proctosigmoidoscopy determines four factors of importance: (1) the site of the growth, (2) the size, (3) the amount of fixation, (4) the degree of obstruction.

Ulcerative disease of the lower bowel depends preponderantly on proctosigmoidoscopy for differentiation. It may be amebic, tuberculous, or chronic ulcerative colitis. Amebic ulceration of the rectum occurs by no means in a majority of cases of amebiasis, the cecum or

other segment of the colon being the much more frequent site. One-third of patients with active dysentery have rectal ulceration. Frequently when endameba histolytica cannot be found in the stool, they can be demonstrated in large numbers in scrapings from the ulcers.

Amebic ulcers are discrete with comparatively normal or mildly hyperemic mucosa between them. They are larger and deeper than those of chronic ulcerative colitis, with margins undermined and the ulcer itself covered by a greyish white cap. They bleed easily and in severe ulceration the characteristics of the ulcers cannot be discerned because of bleeding. The ulcers vary in size from 2 mm. to 3 or 4 cm. or larger, margins are irregular, with ragged overhanging edges.

Bargen[5] states that 95 per cent of chronic ulcerative cases begin in the rectum, and he classifies the course of the disease in four stages. The earliest changes are those of a diffusely inflammatory reaction in the mucous membrane, with no sharp line of demarcation between healthy and abnormal tissue. There are minute ecchymotic areas. In the second stage, the mucous membrane appears diffusely edematous, thick, boggy and red. Bleeding occurs very easily and ecchymosis is more marked. Following this, little yellowish granular spots appear beneath the mucous membrane; these are miliary abscesses. In the fourth stage, the miliary abscesses have ruptured through the mucous membrane and miliary ulcers are present.

These four stages are seen only at the initiation of the disease. In old cases, or in cases where some healing has taken place, fibrous scars supplanting the mucous membrane, and larger irregular ulcers, are present. The pock-like scars are the most significant local findings at this time. As scarring has progressed, contraction of the bowel, tube-like with or without stricture, has resulted. Any difficulty of diagnosis at this stage is readily cleared up by x-ray examination, which shows the typically smooth small-calibre colon. Polyposis and stricture, two of the most common complications, are surely detected by proctoscopy.

The third type of ulceration which must be differentiated, is that from tuberculosis. It is uncommon in the rectum, because its incidence in the colon is inversely as the distance from the ileo-cecal valve. Kaufmann[6] describes tuberculous ulcers as follows: "(1) The edges are scalloped, irregular, undermined, and heaped upward. (2) They are usually at right angles to the long axis of the bowel, with a tendency to become annular corresponding to the lymph vessels. (3) Recent ulcers have diffusely caseous bases which may extend into the muscularis as far as the serosa. (4) Tubercles are frequently seen in the serosa over the ulcers as dark-grey vascular dots. Areas of uninvolved mucous membrane may be found extending into the ulcerated area. Tunnel-like extensions burrow under the mucous membrane."

The status of ulcerative processes in the bowel cannot be determined as treatment is being carried out by symptomatology alone. The symptoms of ulcerative colitis and dysentery, like those of peptic ulcer, disappear before the ulcers have healed. The great advantage of being able to see the ulcers and know when they have healed is evident. By this means alone can disappointing relapses be prevented. It is no more justifiable to treat "colitis" without first inspecting the mucous membrane with the protoscope than it is to treat a sore throat without looking at the pharynx.

Other granulomatous diseases, as actinomycosis, syphilitic stricture or ulceration, non-specific infective granuloma, and hyperplastic tuberculosis, are infrequently met with in the rectum. The latter offers considerable difficulty in the differentiation from carcinoma. General appearance is significant but biopsy should be done. Seemingly harmless but nevertheless potentially malignant adenomata are often discovered.

The rectum, a frequent site of varied ailments, is a notoriously neglected part of the human anatomy, and often unnecessarily so. In view of this, it seems pertinent to remark that all available methods should be utilized in determining the exact status of disease of that organ. Proctosigmoidoscopy, an easily performed office procedure available to any general practitioner, is not done often enough considering the invaluable information it supplies. If one early carcinoma is discovered in one hundred negative examinations, ample recompense is provided the fortunate discoverer.

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POSTPARTUM HEMORRHAGE

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(Read before the Forty-Third Annual Meeting of the Arizona State Medical Association, held at Prescott, June 7-9, 1934.)

Postpartum hemorrhage is the most serious of obstetric emergencies, and by many obstetricians is considered a preventable accident. Although I do not agree with this opinion, I do recognize that there are certain preventive measures which should be taken. Of these, increasing the coagulability of the blood, prevention of atony in the uterus, and immediate repair of traumatism of the birth canal, probably are the most important.

Today, any consideration of the phenomenon of blood-coagulation immediately turns to the problems of calcium metabolism, so it may not be inappropriate to epitomize a paper by Stephen Szenteh[1] in which he discusses "The Hemostatic Action of Calcium in Delivery and in the Puerperium." Szenteh ascribes a decrease in the dispersion of colloids and a thickening of the walls of the blood-vessels to the pharmacological effects of calcium, since it is a well-known fact that calcium deficiency reduces the coagulability of blood and the tonicity of involuntary muscle; administration of calcium restores these lost powers and so tends to prevent excess capillary exudation. Although the mechanism involved in these phenomena is not now known, this much is certain: the presence of calcium is absolutely essential. Now, the disappearance of secondary hemorrhage at delivery, in case there is no traumatism, is due in part to complete thrombosis; continued hemorrhage, to faulty thrombus formation. Bleeding during the puerperium is almost sure to occur in those cases which are already suffering from thrombopenia, hemorrhagic diatheses, scurvy, and some acute infections involving calcium deficiency; bleeding may occur during the puerperium without apparent reason, but it should be recalled that the calcium content of the blood decreases at an increasing rate during pregnancy and may reach a low of 9.4 mg. per cent at its close. Experimental injection of calcium in three such cases produced an immediate cessation of puerperal hemorrhage. These facts suggest that predisposition to hemorrhage may be due to a calcium deficiency, and that the condition may be altered by the administration of calcium during the puerperium.

Since the appearance of Szenteh's report, I have made a study of 314 obstetrical cases. In these cases symptomatic evidences of calcium deficiency, such as muscular weakness and nocturnal cramps in the legs, were sought. Every patient who exhibited positive symptoms was advised to take 30 drops of viosterol once a day until the cramps ceased; three days usually sufficed. The dosage then was reduced to 20 drops, and was continued throughout pregnancy. Only one patient experienced a postpartum hemorrhage, and this one failed to take the viosterol.

Atony of the uterus, which is thought to be the most common cause of hemorrhage, can be controlled to a certain extent by competent care during the third stage of labor, but unfortunately the causes of uterine atony are so varied that no comprehensive rules governing the situation can be laid down with safety. Hemorrhages due to exhaustion following prolonged labors, can be controlled only by timely application of the forceps or by podalic version. The over-distended uterus in polyhydramnios and in twinning, should forewarn the physician of impending postpartum hemorrhage, as also should a precipitated labor or too rapid manual extraction; delivery under a general anesthetic should never be consummated rapidly, and no attempt should be made to hasten explacentation until the patient has recovered from the anesthetic. A distended bladder, even, may produce atonic conditions in the uterus.

Proper conduct of the third stage of labor necessitates a comprehensive knowledge of

the mechanism of labor, and any discussion of the subject might profitably be introduced by a review of this mechanism. After expulsion of the child, the uterus rapidly contracts and the placenta, being incapable of adaptation to this sudden change, begins to separate in the spongy layer with which the uterus is lined. During each uterine contraction some bleeding occurs, and finally the retroplacental clot becomes so extensive that the placenta is completely separated and is expelled. This latter event can with safety be hastened if, upon the appearance of unmistakable signs of placental separation, 1 cc. of pituitrin be administered hypodermically; additional assistance can be given if Crede's method be applied at the acme of uterine contraction. No attempt to hasten expulsion should be made, however, before the uterus has risen above the umbilicus and has assumed a globular shape, nor before uterine bleeding and descent of the cord have occurred; these are conclusive evidences of placental separation. The uterine fundus now should be grasped in the palm of one hand and the cervix pressed inward and downward behind the pubic symphysis with the fingers of the other hand; the fundus then may be brought forward and the uterus held in position until it is well contracted and there is no further hemorrhage. Ergot one-half drachm is now given and repeated every three hours for 24 hours.

If normal separation of the placenta does not occur, the adherent placenta may be removed manually. This should be accomplished by the introduction of the collapsed hand into the uterus, which then is worked gently downward over the hand by the application of external pressure with the other hand. Seek the margin of the placenta and separate with short and gentle sawing motions of the ulnar side of the hand; during this operation the fingers should never bore into the placental tissue. As separation progresses, the hand is inserted farther and farther into the uterus until half of the forearm is buried within the vagina. At the same time, external pressure from above will have brought the uppermost portions of the placenta within reach. After the placenta has been separated, it may be expressed by application of Crede's method. The hands then may be washed and one of them re-inserted for exploratory purposes; no placental tissue must remain behind. Should it be impossible to locate the line of cleavage between the uterine wall and the placenta, one has to deal with the rare placenta accreta, which can be corrected only by an hysterectomy.

Hemorrhage, following placental delivery and normal contraction of the uterus, is suggestive of traumatism of the birth canal. Such traumatism must be located and corrected immediately. One of the common sites of injury is the region of the clitoris, where laceration may result in fatal hemorrhage; but laceration in this area may be located easily, and usually can be controlled by ligation. If this treatment fails, it may be necessary to institute pressure. Vaginal laceration, too, is not uncommon. It usually yields to vaginal packs. Cervical laceration may result from operative delivery, and may be overlooked entirely, unless careful examination be made with the aid of a De Lee speculum and a tenaculum which is used to draw the cervix downward into plain view. Hemorrhage in this region is best controlled by suture.

If placental delivery be followed by relaxation of the uterus with resultant hemorrhage, or if careful inspection of the placenta has shown that fragments are missing, bimanual exploration of the uterus must be undertaken immediately in order to remove all placental fragments, clots, and adherent membranes. Occasionally it may be necessary to pack the uterus, especially when low placentation has occurred. All of these operations should be done under light anesthesia, unless the patient be exsanguinated to the extent that she feels no pain. Although there is danger in the procedure as outlined, the results are better than would be those of continued hemorrhage or infection arising from the retention of placental fragments.

With postpartum hemorrhage apparently under control, the uterus should be watched for at least one hour. Even though there be no further hemorrhage, there is still a very real danger confronting the patient. Nature has shown consideration for the pregnant woman by causing a normal increase in her blood-volume of approximately 500 cc. as compensation for her normal loss of 300 to 600 cc. But the patient's condition can not be predicated upon this normal compensatory

phenomenon; the loss frequently is much greater, and if it approaches a volume of 1500 cc., usually results in death. Danger signals are seen in pallor, restlessness, air hunger evidenced by yawning, clammy perspiration, thirst, rapid and weak pulse, roaring in the ears, and visual disturbance, vomiting, and fainting. These symptoms of shock call for immediate treatment.

Restorative measures should include elevation of the foot of the bed, administration of adrenalin hypodermically, and the intravenous injection of glucose. The latter can be accomplished without delay, in the home or in the hospital, if a sterile 50-cc. syringe and a 50-cc. ampoule of a 50 per cent solution of glucose be carried in the physician's case. The action of concentrated glucose is two-fold. First, it is irritant to the intima of the blood-vessels, and so causes the smooth musculature to contract, thereby raising the blood-pressure; and second, it produces osmotic tension which can be relieved only by an increase in the blood-volume at the expense of surrounding tissues. In my opinion, intravenous administration of glucose is the most important feature of our armamentarium against the ravages of postpartum hemorrhage. Its instantaneous effect tides the patient over the critical interval until hypodermoclysis or blood-transfusion can be completed, where such extreme measures are necessary.

Late postpartum hemorrhage is one occurring after the first day following labor, and is usually caused by retention of placental fragments. In this condition the uterus is large and boggy, with the cervix patulous. Relief may be effected by digital exploration or by a blunt curette, carefully avoiding perforation of the uterus.

Infection also may be an etiological factor in late postpartum hemorrhage and when no relief is obtained by Fowler's position, oxytocics, and ice bags over lower abdomen, hysterectomy is indicated.

In conclusion, I wish to emphasize again the importance of increasing the coagulability of the blood, of preventing uterine atony, and of immediate repair of all traumatism of the birth canal. By these methods, we prevent undue loss of blood, and thereby husband the patient's powers of resistance to infection; at the same time, we have promoted involution of the uterus, and have shortened the puerperium.

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ACUTE POLIOMYELITIS

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(Read at the annual meeting of the New Mexico Public Health Association, July 18, 1934, at Las Vegas.)

Acute poliomyelitis is a contagious, communicable disease resulting from the growth in nerve tissue of an ultra-microscopic organism or virus. Because of the shocking effects of this disease, it causes, perhaps, more fear on the part of parents than any other illness. And although the incidence of the disease, even in acutely epidemic proportions, is not high, when it does strike, the results are sufficiently alarming to explain the fear it arouses in us all.

As in other so-called virus diseases, the exact cause of poliomyelitis is not known. However, the sum total of what we do know about this illness is considerable. The first description of the disease in the literature, sufficiently exact to be sure that it was poliomyelitis, was by Dr. Underwood in his "Diseases of Children," published in Philadelphia in 1793. Since the middle of the nineteenth century, our knowledge of the disease has gradually increased. We have learned from its pathology that really satisfactory treatment depends upon prevention. Lately, research along two different lines seems to hold much promise of ultimate success in reaching this goal.

Symptomatically, poliomyelitis is rarely diagnosed in its pre-paralytic stage in the sporadic case. When it begins to assume epidemic proportions, however, few escape early detection. In mode of onset, it is characteristic of many other acute contagious diseases, with the addition in the usual case of certain distinctive features. There is always headache, fever, and general malaise, usually associated with constipation, but occasionally with diarrhea at onset, and a flushed face. In addition to the flushing of the face, there is commonly

a glazed expression with a flat, expressionless countenance, unless the pain is sufficient to give a worried appearance to the face. The patient is usually drowsy, but when there is also an encephalitis present there is an excitement stage, even going on to an acute delirium. There is almost always some pain in the back of the neck, with a stiff painful spine. Any flexing of the neck accentuates this pain; often a child in considerable pain can be entirely relieved by removing the pillows so that his head may lie flat on the bed. The pain on flexing of the neck does not give the involuntary rigidity of a meningitis, but usually does cause more or less voluntary rigidity. Perhaps the most constant, almost diagnostic, sign is elicited by having the patient sit on the edge of the bed, with his feet dangling. He will hold the spine erect and will support it by placing his palms on the bed to the side and in back of his body, attempting to support with the arms the painful back.

Thus, in the usual early case we see a listless, quiet child, with no appetite, a drowsy, expressionless face, slightly flushed, and with a moderate fever, rarely over 102°. The pulse is usually very fast, quite out of proportion to the rise in temperature. Examination discloses the stiff, painful spine, and the characteristic position when sitting on the side of the bed. The throat may or may not be reddened, there is rarely any sign of a head cold except when co-incidental, nor is there any rash in the mucous membranes or skin.

It is usually not until 48 to 72 hours later that the paralysis develops. Meanwhile the patient's condition remains about the same, or he may have an interval of a day or two when he appears much improved. Just before, or associated with, the paralysis there is usually a marked hyperesthesia. The skin is often exquisitely painful, necessitating a rack of some sort to keep the bedclothes from the skin. In the cases in which there is no paralysis there is usually this hypersthesia.

The mortality figures and extent of the paralyses depend apparently on the virulence of the epidemic. On the average mortality will vary from 5 to 15 per cent of the morbidity, and the paralyzed cases will vary between 20 and 60 per cent of those diagnosed. The most common site of paralysis is in one or both legs and next most common in one or both arms. There is usually marked retention, requiring catheterization as well as enemata. This, however, is not permanent and occasionally is the only proof that the case is one of poliomyelitis.

I will not go into the pathology of this disease, except as it explains the symptoms. The first sign of invasion is a round-cell infiltration of the blood vessels of the meninges, accounting for the mild signs of meningitis at onset. Next there is a similar invasion of the posterior root ganglia, with a marked effect on the sensory nerves, giving the hyperesthesia and various changes in the motor reflexes. Co-incidental with this is an invasion of the motor area of the cord, usually in the cervical or lumbar enlargement, most marked about the cells in the anterior horns of the cord. This accounts for the fact that acute poliomyelitis is often called acute anterior poliomyelitis. The invasion of the motor area leads to more or less destruction of the motor cells in this location, with the subsequent varying degrees of paralysis. The destruction of these cells leads to irreparable damage. The edema about these cells, does, however, lead to interference with the function of many more cells than are destroyed, which accounts for the fact that the initial paralysis is always much greater than the permanent paralysis. As of course you know, the voluntary muscles are the only ones paralyzed in the usual case of poliomyelitis. Occasionally the vital centers of the brain are affected in the encephalitic type, but this is fortunately quite rare.

As for the treatment, let me first speak of that of which we are quite sure, and take up later the debatable points. As in any other acute illness, hygiene is of the utmost importance in keeping the patient's resistance at the highest possible level. This includes the securing of an adequate fluid intake, the maintenance of successful elimination, and the care of the skin. The rest in bed should be as absolute as possible from onset. This rest in bed is of vital importance to those with paralysis, and should be continued in these cases for from four to six weeks. This allows the motor cells of the anterior horn which were damaged but not destroyed, time in which to recuperate and recover their function. During this time sand bags and various light splints should be employed to prevent early deformity. Mas-

sage is absolutely contra-indicated until the hyperesthesia is entirely gone, and then it must be instituted with caution. Passive exercises are used first and then active exercises commenced carefully. From this point on, the case, if at all possible, should be in the hands of a competent orthopedic surgeon. It is at this stage that the use of swimming pools has become so satisfactory. The movement of the parts of the body against the water seems to give the ideal amount of resistance against which the muscles may work. It is only late in the course of the treatment that the patients are allowed to swim. At first they merely lie in the water, moving the affected parts only under the most careful supervision. The swimming pool is also of value in the re-education of the muscles after operations to improve the use of impaired joints.

It is in the prevention and early treatment of poliomyelitis that we have so far failed to make satisfactory progress. Recent studies have thrown some light on this problem; apparently there are family strains that are much more susceptible to poliomyelitis than others. For instance, in Vermont where poliomyelitis is almost endemic, many families have escaped it entirely, while others have had a fairly high incidence in branches of the family which were never in contact with each other. This finding may open up a most interesting field of study.

You have all read, I imagine, of the experiment now under way in New York City. The spinal cords of monkeys about to die of poliomyelitis were treated with 40 per cent formalin to kill the virus. This was then injected into healthy monkeys. When later infected with the active virus, none of this group became ill, while all the control monkeys died. Some of this material was then injected into volunteer adults, among them the beloved Dr. Park. Their blood will later be mixed with the active virus and injected into monkeys to see if the virus has been neutralized. If this is successful, a group of non-immune children will also be inoculated. The other line of research I have mentioned may enable us to pick out the children most in need of this prophylactic treatment, if successful.

Much stress has rightfully been placed on the early pre-paralytic diagnosis of poliomyelitis, for two reasons: one, to isolate the case and contacts as early as possible; the other, to give convalescent serum in the hope of neutralizing the virus before paralysis has set in. Concerning the first reason there is no debate. On the second, however, later studies seem to contradict the earlier enthusiastic reports. The variations in the severity of epidemics, and the human desire to do everything possible for each case, make the use of adequate controls difficult to obtain. It is certainly the part of wisdom to continue the use of serum when possibly available, until this subject has been satisfactorily thrashed out.

One other form of treatment for the paralyzed cases should perhaps be mentioned, if only because of the publicity attending its use. I am speaking of the Drinker respirator. This is used in the bulbar type of cases, in which there is a complete or almost complete paralysis in the muscles of respiration, that is, of both the diaphragm and intercostal muscles. Of the two of the larger published reports I have seen, twelve out of thirty-four with complete paralysis recovered after living in this machine for varying periods, none of whom could possibly have survived without it. In the other report, seven out of ten lived, including those who had almost complete paralysis.

Epidemiologically, the most satisfactory method of prevention we have at present, is isolation until the age of relative non-susceptibility arrives. We know that in the average epidemic three-fourths of the cases are in children under five years of age and that the attack rate of those over ten is about one-eighth that of the population taken as a whole. We know also that the epidemics of poliomyelitis are definitely associated with the harvest seasons. We consequently know when a real epidemic may be expected, and the population group which will be predominantly affected. We also know that the virus enters the nervous system by way of the naso-pharynx, multiplies, and leaves it by the same route. In the recovered case, the virus apparently disappears within two weeks after the acute attack. We do not know yet how long a healthy contact may act as a carrier.

The usual procedure in the control of an epidemic of poliomyelitis is fairly definite. The patient and intimate contacts are isolated for three weeks. Travel and visiting should be

limited to that of absolute necessity. The gathering together of children under five should be prohibited, and that of children under ten, restricted as conditions determine. Individual prophylaxis seems at present to be impossible.

The low attack rate of the disease even in acutely epidemic proportions, is a measure of hope insofar as the likelihood of any particular person's catching it is concerned. We also now have sufficient reason to hope that in a few years even this low incidence may be materially decreased and that the crippled child with wasted muscles may soon become a much rarer sight than at present.

CELIAC DISEASE
Two Case Reports

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Celiac disease, or chronic intestinal indigestion, can no longer be considered a rare disease. From recent reports, it is on the increase.

The cause is unknown. Many factors such as lack of vitamins, faulty digestive secretions, and faulty diets in the first years of life, must be considered. There is inability to digest carbohydrates and fats; just which of these factors is the primary offender is unknown. The fact that there is a flat or low blood-sugar curve seems established.

The onset is gradual—often in the second year of life—rarely after the fifth. Untreated cases, of course, continue until later in life. The gradual onset makes it difficult to detect in its early stages. The observations of the parents is the anorexia, failure to gain weight, and possibly the height and personality changes. The physician who sees many children with these common symptoms should always bear this condition in mind. The personality changes are marked, because the child is irritable, intractable, and is in general a trial to parents and not infrequently a trial to the physician.

Questioning will usually bring out a history of constipation. Rarely do parents consider the diarrheal phase of the condition abnormal. Their attention is directed to the constipation, and they feel that three to four stools daily are excellent.

The stools are not watery. They are large, soft, of a foamy or yeast-like character, and sometimes glisten because of the large fat content. The odor is foul. The color most frequently is grayish or a light yellow. There is alternately a constipation and then a diarrhea.[2]

Examination will disclose malnutrition, fatigue posture, and most often an enlarged abdomen. The abdominal enlargement varies, as it is due to gaseous distention. Frequently the abdominal enlargement is so marked as to suggest tuberculous peritonitis or Hirschsprung's disease. There may be an associated diagnosis such as diseased tonsils, but the physical condition is out of proportion with the few pathological findings.

The laboratory examination of the stool should be for fat content and to establish the ratio of the Gram-positive to the Gram-negative organisms. The fats may be determined readily by the simpler tests. The increase is so pronounced that for practical purposes a delicate technic is unnecessary. The fat content of the stool is high—40 to 50 per cent is not uncommon. The Gram-positive organisms are of the bacillus bifidus group; they disappear with improvement, and the Gram-negative, or bacillus coli, group predominate. In one case, the estimated percentage of Gram-positive organisms was 30. In another, the Gram-positive organisms were 50 per cent. Of course the intestinal flora varies with the food; most observers consider the Gram-positive increase an important diagnostic point.

In the untreated cases, the child becomes stunted, weak, and is a burden to all; with treatment, the outlook is good.

The treatment is simple. We are tempted to give tonics and various vitamin-containing syrups and sweets, with which the market is flooded, and of course we are tempted to insist on a high-caloric diet.

These factors will only aggravate chronic intestinal indigestion. Sweet milk, breadstuffs, potatoes, cereals, and sweets, must be absolutely forbidden. Cod-liver oil and fat foods also must be eliminated from the diet. Obviously protein foods only are left. Protein milk may be given in as large amounts as the child desires. Calcium caseinate and buttermilk may also be used, although they are

not so satisfactory. There is, however, one form of carbohydrates which may be given from the first, and that is ripe banana or banana powder. For some reason, digestion of this type of sugar is possible. The child may have as many bananas as he wishes. One patient, a seven-year-old girl, eats from six to ten bananas daily. Vitamins must be given. The ripe bananas are sufficient except for vitamin D, so viosterol is used for this purpose. Carotene may be given if additional A units are required.

This diet is continued indefinitely, and usually in three to four weeks we may add small amounts of leafy vegetables and fruit juices. Other protein foods, such as cottage cheese and lean meats, are given more rapidly. This diet will always improve the condition, and the general response to the diet will determine how long it must be continued; months are always necessary—and sometimes years. A simple break in the diet such as taking a small piece of bread, may cause a return of symptoms. Due to the large food intake, castor oil should be given once a week in the beginning.

In celiac disease we have a disorder which we do not understand, but one for which we have an effective therapy. The diagnosis is easy; the treatment is simple. and the results are good. The untreated course is tragic.

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TRAINING OF MIDWIVES

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(Read before the New Mexico Public Health Association, July 18, 1934, at Las Vegas, N. M.)

From the dawn of civilization there has been the constant striving of serious-minded people to lift in any manner possible the primeval curse from women. Through all sorts of superstitions which involve the wonderful process of reproduction, as they do any other mysterious process of nature, the light of increasing knowledge at first glimmered, and with the passing of centuries became brighter and brighter until today we have a flood which enlightens every nation, state and community in our civilized world.

Where, in the dim dark past, women would go through the agonies of childbirth unassisted, suffer until kindly nature finally brought forth its miracle, our increasing knowledge has devised various aids to the less fortunate of our women so that now, in the hands of the skillful obstetrician, the process is relatively painless and beset by comparatively few dangers. But we have still in our outlying communities people who go through this trial with little or no competent help. It is on behalf of these people that I would presume to call your attention this afternoon to a few of the essentials demanded by the standards of modern obstetrical care.

Before I proceed with this, let me call attention to a few fallacies which persist among us regarding childbirth among savage people. We have all heard about the Indian woman who falls behind the procession for a time and, after her baby is born, catches up with her family and goes on about her business. While this may be the case in some very few instances, it is by no means the rule with this, or any other people. Even the beasts of the field demand some time for the completion of and recuperation from a birth. The fact is, complicated births among savage people are just as common as they are among civilized people, but most of these go unrecognized and end in the death of the baby and possibly of the mother—nature's method of dealing with an impossible birth. The moment a baby dies, it becomes relaxed and the birth is, in most cases, relatively easy. The Arctic explorer Steffansson spent the winter of 1912 in a certain Eskimo village of not over forty or fifty families. He returned to the same location in 1918 and noted that several of the women he had known on his previous expedition had died in childbirth. Picture for yourselves the untold human suffering expressed in these few unimaginative words.

In many communities of your state (and the same is true of almost all the Southwest) the possibility of getting trained maternity help is entirely out of the question except in the most extreme cases. It is necessary to rely upon whatever help may be available in the community. It is here that the midwife

could be made to do a very necessary, and an exceedingly humane service.

The qualifications of a midwife might be considered under several headings. In the first place—character. Such a woman must be sympathetic, yet firm. She must be able to keep her own counsel and not gossip in the community. She must take her work seriously, realizing her responsibilities and the importance of successful births to the parents and to the community. When in doubt or in the presence of complication, she must be willing to accept the service and defer to the opinion of a local doctor of medicine. Second conforming to the high technical demands placed by modern civilization on all fields of endeavor, this branch of service must always strive to perfect itself in every possible manner. For this reason there must be knowledge and experience. Knowledge in the anatomy and in the physiology of the function of reproduction. The midwife must be thoroughly familiar with the structure, not only of the mother, but also of the baby, and be able to recognize with a fair degree of accuracy the various positions (normal and abnormal) that an unborn child may assume. She must know the various signs to which the skilled obstetricians pay so much attention. She must recognize the various stages of birth and must know the dangers that may beset each stage. She must be alert to recognize when something goes amiss, and above all have a thorough knowledge of the normal progress of childbirth, for, when the normal process is thoroughly mastered, the abnormal will immediately come to her attention. Third: The subject of cleanliness, and the modern teachings of antisepsis and of sterilization of instruments and linen, should be known. She must keep her person and her hands scrupulously clean, for filthy help in a case of childbirth is far worse than no help at all.

We in America have not gone very far in the training of midwives. Some of the European countries can teach us valuable lessons on this important profession. In Vienna there is a school where they accept selected women after they have finished their regular nurses' training, for a one-year course in midwifery. These students deliver hundreds of women under the supervision of experienced midwives and obstetricians, and learn their art and their profession thoroughly. They are then examined by a licensing board, and are permitted to go out into the communities and practice their profession. Their sphere of activity is to conduct normal childbirths only. Whenever the case becomes abnormal in any way, the attendant calls the physician in her community, who is in duty bound to come to her assistance at once. In the British Isles there are several schools (which have been established since about 1905), such as in Glasgow, Edinburgh, and London, where much the same training is given as in Vienna, and the board admits to examination, for licensing in midwifery, only those women who have completed the course prescribed by the laws. Spain has had, for some years past, a very stringent law dealing with the qualifications of midwives. That country demands practically the same as Austria and the British Isles, and there are penalties placed on the practice of midwifery by unlicensed persons. Sweden, Norway, and Denmark view the profession of midwifery with equal seriousness and hedge it about with careful regulations and laws.

In our own country, the plight of the mountaineers of Kentucky and Tennessee and neighboring regions, has stimulated various philanthropic groups to take promising candidates from the ranks of the nursing profession and send them to Europe for training in midwifery. These nurses (The Mounted Nurses of the Alleghanies) are doing excellent and humane work—really fitting the dignity of civilized communities. We in the west have a similar problem, which must be met either by the establishment of training centers of our own, or by sending capable women abroad to obtain the necessary instruction.

Far too often in our communities a woman is allowed to labor hour after hour with an impossible obstetrical complication, which ends only in disaster if it is not recognized. The helper available all too often has no more qualifications than the fact that she has had a number of children herself and has had "good luck with baby cases." Physicians are often shocked by the evidence of neglect when they are called upon to do what can be done to set right the results of such heartless abuse and neglect. It is for these women and for their unborn children that I plead for the establish-

ment of a midwifery service that shall be effective and humane.

I would not dispense with the physician nor introduce the midwife in the cities and larger towns; only in the outlying communities, where the physician is far away, is it desirable and practical to furnish him with this sort of aid, which should be efficient and reliable in every respect. It is impossible, as you know for physicians to enter all these homes where service is needed; often his territory is large and he is, after all, but one person. But if efficient help can be given, leaving him only the complications to deal with among the poor people who cannot command his service with practical remuneration, the people will be far better served.

COCCIDIOIDAL GRANULOMA

Report of a Fatal Case

LESLIE M. SMITH, M. D.
W. W. WAITE, M. D.
El Paso, Texas

(Read before the El Paso County Medical Soecity)

During the past two years several cases of coccidioidal granuloma have been recognized in the section of country about El Paso, Texas. All these cases apparently originated in this vicinity, so that here is undoubtedly a focus of the disease. The appearance of the disease in the Southwest and its serious nature, make it imperative that physicians in this part of the country acquaint themselves with its character and bear it in mind in differential diagnosis. The present case is reported to illustrate the extensive involvement found in some advanced cases of coccidioidal infection. tion.

CASE REPORT

E. G., a Mexican woman, age 27, was admitted to the El Paso City-County Hospitol, May 24, 1932. She had lived in El Paso for ten years, and had never been in California or any other locality where coccidioidal granuloma is endemic. She complained of swelling and some pain in the right knee and left elbow, of one-year duration, and draining sinuses about both joints, of recent origin.

Physical examination revealed a rather undernourished young woman with slightly swollen right knee and left elbow. About these joints were several deep sinuses, infiltrated about the orifices, and exuding pus.

Examination of the pus from the sinuses showed round doubly contoured bodies, some of which contained endospores. Culture on Sabouraud's medium gave a typical growth of coccidioides immitis. The blood Kolmer was negative; but using coccidioidin as the antigen, a positive complement fixation was obtained. The blood counts were normal.

Biopsy from the edge of a sinus showed a granloma containing coccidioidal bodies. There were no epidermal abscesses.

X-ray examination of the chest revealed bronchial thickening and several calcified bodies in the lung. X-ray of the involved joints showed marked distortion and erosion about the head of the left ulna, and increased density of the lower end of the humerus. The periosteum of the ulna was thickened. There was an osteomyelitis of the right patella, with some destruction.

The patient was given intravenous injections of colloidal iodine twice a week and daily instillations of tincture of iodine in the discharging sinuses. There was a gradual decrease in the discharge and improvement in the patient's general condition. She left the hospital August 20, 1932, and disappeared from observation.

On August 13, 1933, the patient again was admitted to the hospital in a markedly emaciated condition. The sinuses were again draining freely. The patient was extremely weak and the heart sounds were feeble. The urine contained albumin and hyaline casts. The temperature varied from 96° to 99.6°F. Treatment was instituted similar to that she had had during her previous stay in the hospital, along with tonics. Her condition steadily became worse and she expired ten days after admission.

AUTOPSY FINDINGS

Joints as already described.

Lungs: There was a band of adhesions over the pleura. The right lung was quite heavy, with consolidated lower lobe, greyish-red in color, firm and moist. The left lung contained several small hard areas beneath the surface, which on section were found to contain cyst-like necrotic cavities filled with greyish purulent material.

The heart was small and presented no gross lesions. In the lower part of the adherent pericardium, there was an elongated solid nodule about 20 mm. by 10 mm. On section it was found to be filled with yellowish caseous material.

The kidneys were swollen and soft, and the cortex was about twice the normal size.

Smears and sections of the caseous nodules from the lungs and pericardium showed doubly contoured bodies of Coccidioides.

Pathological diagnosis: Coccidioidal infection of the left ulna and humerus and right patella, with breaking down of soft parts into sinuses, adherent pericarditis (coccidioidal), multiple coccidioidal abscesses of the left lung, chronic fibrous pleurisy, lobar pneumonia of right lower lobe, and acute nephritis

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ANNOUNCEMENT

The Radiological Society of North America will hold its next Annual Meeting at the Hotel Peabody, Memphis, Tennessee, December 3-7, 1934. The medical profession is cordially invited to attend. Further information may be obtained by addressing the secretary-treasurer, Dr. Donald S. Childs, 607 Medical Arts Building, Syracuse, New York.

H. P. Mills, Counselor for Arizona.
J. R. Van Atta, Counselor for New Mexico.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health

VILLAGE SETTLEMENTS FOR TUBERCULOSIS.

Sanatorium treatment for the average consumptive is not enough. It is of great personal and social value while it lasts, but we all recognize that the patients' problems are not at an end after six months' residence in a sanatorium. The subsequent adjustment to economic and social life may and often does involve a loss of most of the gains made. Failure to make this adjustment means disaster to the individual and waste to the community which has subsidized his sanatorium care Nobody in this country has done more than Mr. Edward Hochhauser, director of the Altro Work Shops in New York City, to grapple with this problem. Says he[1],

> The need for intelligent and sympathetic understanding of the employability of the tuberculous, as well as understanding of their limitations, is perhaps more marked today than in economically normal times. To create a proper response on the part of the patient, to secure appreciation by those near him of his limited capacity, and to stimulate his natural desire to be self-supporting, are all fundamental. But we must educate his family, his employer, and in fact the whole community. Otherwise the patient will continue to return from a highly protected environment, where his physical limitations determined the whole plane of his life, to an environment lacking in understanding, and geared to try the mental and physical strength of the hardiest.

American schemes and institutions for the rehabilitation of the tuberculous have been very well described in a pamphlet by Mrs. Burhoe[2], and I shall not attempt to recapitulate them here. Suffice it to say that while American experiments in rehabilitation are full of vitality and offer numerous valuable examples to the rest of the world, they do not as yet include any experiment on the lines of the village settlement. Yet in the village settlement the ideal of Mr. Hochhauser, quoted above, to educate the family, the employer, and the whole community, as well as the patient, is achieved at a single stroke by bringing all these elements into one geographical unit.

The pioneer village settlement is at Papworth,[3] twelve miles from Cambridge, in England. It was founded in 1918 by its present director, Sir Pendrill Varrier-Jones. At present it contains more than a thousand inhabitants of whom some 400 are actual patients. The actual cases are under treatment either in the hospital for advanced cases or in the sanatorium. There are in addition 600 ex-patients who live together in hotels if single, or if married, with their families in the 106 model cottages. There are more than a hundred children in the settlement. No child living in the settlement has ever yet developed clinical tuberculosis, nor has there yet been a single case of tuberculous meningitis in any child in the village. The village industries include carpentry, building, cabinet-making trunk and suit-case making, upholstering, printing, ticket-writing boot-repairing and poultry farming. The sales for 1932 amounted to 72,115, or more than $360,000 at the present rate of exchange. Dr. Bardswell writes:

> Regular work means regular pay. The pay is on the low side some may think, but it is enough for all reasonable needs. Anxiety is recognized as a common cause of relapse amongst tuberculous people. There is no anxiety in these villages because all the removable causes of anxiety are removed. They are well-ordered places. At 10 o'clock people are in bed. If you go round after 10 o'clock you will not see a light anywhere. The people are taught to live a rational life. There can be no better education as to how to escape tuberculous disease.

Other settlements have sprung up in England and in the Irish Free State. Recently the French Government has established a large settlement at Salagnac[4] with accommodations for 372 families. Sir Humphrey Rolleston, president of the Papworth Village Settlement, recognizes in Potts Memorial Hospital at Livingston, New York, an institution with "the same objectives and methods" as his own. But according to my information, the family residence, which in my view is a most important element in the settlement plan, is there rather an ideal than an accomplishment.

In New Mexico we are scarcely rich enough to build such a settlement for ourselves. One cannot help thinking though, that, if some national philanthropic organization wished to undertake an experiment of this kind, they would find an ideal site in the Southwest.

REFERENCES

1. Hochhauser, E.: Tuberculosis—a family disease, social aspects. Trans. Nat. Tub. Assoc. 1933. p. 271.

2. Burhoe, B. W : The social adjustment of the tuberculous. Nat. Tub. Assn. 1934. p. 55.

3. Rolleston Sir Humphrey: Papworth: the

parent village settlement for tuberculosis. Canad. Pub. Health J. 24:555 (December) 1933.

Bardswell Noel: Some aspects of the work of the sanatorium industrial villages of Papworth and Preston Hall. Tubercle 15:292 (April) 1934.

4. Brown M. W.: Salagnac: A hospital city in France. Med. J. & Record. 137:472 (June 7) 1933.

THE NEW MEXICO MEDICAL SOCIETY

Notes of the Fifty-Second Annual Session Las Vegas, N. M., July 19-21, 1934.

The large registration and attendance at meetings was a most agreeable surprise in view of existing economic conditions. Those who made the trip, however, were more than repaid by the wonderful scenery and cool breezes of Las Vegas—most refreshing after the torrid heat of southern New Mexico—and the excellent well-balanced scientific program and exhibits presented under the auspices of the Las Vegas County Medical Society.

Registration headquarters and all scientific and business sessions were held in the spacious rooms of the Elk' Club and members were accorded the privileges of the institution.

The luncheon and round-table discussion held thereafter at the New Mexico State Asylum, with Dr. A. B. Stewart as host, should have special mention for the entertainment and intelligent discourse furnished, to say nothing of the subjects presented. The occasion was thoroughly enjoyed by all present and Dr. Stewart and his worthy assistants merited the commendation the presentation received.

The Annual Smoker, held at the Agua Pura Company Cottage in Galinas Canyon, attracted a large number of the members and an eleventh hour impromptu bout added zest to the occasion.

Luncheon as guests of the Board of Directors of the Las Vegas Hospital at the North Methodist Church, on Friday, the second day, provided pleasing entertainment and diversion, as did also the dinner dance at the Castaneda Hotel, that evening.

Important Business Transacted

Elected to Membership:

Dr. Eugene P. Simms, Alamogordo.
Dr. George E. Maxwell, Magdalena.
Dr. Joseph H. Smythe, Laguna.
Dr. Scott D. Schenck.

Applications for membership pending:

Dr. J. N. Becker, Parkview.
Dr. E. J. Hayes, Rogert.

Motons passed:

That a professional lobbyist be employed to look after the interests of the medical profession in New Mexico; that a fund not to exceed two hundred dollars be made available for that purpose, and that Dr. R. O. Brown (Santa Fe) be made responsible for the proper use of that sum.

The appointment of a Committee of five members selected from different parts of the State to take up within sixty days the matter of Federal Emergency Relief and secure such action as it can, the Society to abide by the findings and decisions of the Committee. Committee so appointed:

Dr. W. H. Livingston, Santa Fe, Chairmar.
Dr. J. W. Board, Clovis.
Dr. R. L. Bradley, Roswell.
Dr. G. T. Colvard, Deming.
Dr. Carl Mulky, Albuquerque.

The appointment of a Committee to report on the adoption of a schedule of fees for expert testimony. Committee so appointed:

Dr. M. K. Wylder, Albuquerque, Chairman.
Dr. E. W. Fiske, Santa Fe.
Dr. A. S. Lathrop, Santa Fe.

The Committee recommended fee of $25.00 per day and expenses.

At the General Meeting motion was passed accepting recommendation of the Committee but continuing it for further investigation and a more detailed compilation of fees for different branches of special work, report to be made to the President within sixty days.

The appointment of a Committee to study the question of the medical aspects of the various State institutions, to report with recommendations to the President and the Council.

Resolutions Passed::

"Whereas, The New Mexico Medical Society notes with regret the passing from this life of the following members of the Society—

W. T. Joyner, Roswell,
S. M. Parrish, Raton,
J. H. Johnson, Las Cruces,
C. Plumlee, Hot Springs,
D. H. Carns, Albuquerque,
R. F. Hogsett, Albuquerque,

And Whereas, The New Mexico Medical Society, appreciating the professional work in the past and the promise of professional work in the future, as well as the loyalty to the ideals of the profession of these past members, deplores their loss and desires to give expression to their feelings;

Now Therefore, Be It Resolved, that The New Mexico Medical Society hereby expresses its sympathy to the members of the bereaved families and the communities in which these members labored;

And Be It Further Resolved, that a copy of this Resolution:

1 Be made a part of the minutes of the Fifty-Second Annual Seession of the New Mexico Medical Society.

2. Be sent to the family of the deceased member, and

3. Be published in the official organ of the New Mexico Medical Society—SOUTHWESTERN MEDICINE.

(Signed) R. O. BROWN,
R. L. BRADLEY,
R. L. BUTLER,
Committee on Necrology.

"We, the Resolutions Committee appointed by the New Mexico Medical Society, wish to thank the following organizations, clubs and individuals for the royal entertainment received in Las Vegas:

The Las Vegas County Medical Society for the excellent program and the carrying out of same.

The Elks' Club for use of building and special arrangements made.

The Las Vegas Asylum for use of building and equipment.

The Ladies' Auxiliary for entertainment of visiting ladies.

Dr. A. B. Stewart for luncheon and clinical display.

Mrs. A. B. Stewart for entertainment of wives of visiting doctors and friends.

The Hospital Board for the excellent dinner served by the ladies of the M. E. Church.

The New Mexico Power Company—Agua Pura Water Company—for use of cottage and pure water served.

The newspapers of Las Vegas for excellent reports of meetings of the Society.

The Las Vegas hotels and restaurants for the courteous treatment of Society guests.

The visiting doctors for furnishing part of the program.

Dr. Lingenfelter for his excellent display.

All exhibitors of scientific exhibits.

(Signed) C. A. MILLER, Las Cruces,
G. T. COLVARD, Deming.

ELECTION OF OFFICERS

President-Elect: Dr. C. W. Gerber, Las Cruces.

Vice President: Dr. George W. Jones, Clovis.

Secretary-Treasurer: Dr. L. B. Cohenour, Albuquerque. (Re-elected.)

Councillor for two years to fill unexpired term of Dr. Joyner, deceased: Dr. R. L. Bradley, Roswell.

Councillor for three years: Dr. Carl Mulky, Albuquerque; Dr. C. A. Miller, Las Cruces.

Delegate for two years, A.M.A.: Dr. H. A. Miller, Clovis.

Alternate: Dr. R. O. Brown, Santa Fe.

Board of Managers, Southwestern Medicine: Dr. A. B. Stewart, Las Vegas; Dr. J. R. Earp, Santa Fe.

Meeting Place 1935: Albuquerque, N. M.

The 95 registered were:

Dr. Henry S. W. Alexander, Santa Fe.
Dr. J. W. Amesse, Denver, Colo.
Dr. Frank H. Austin, Carlsbad, N. M.
Dr. Irby B. Ballenger, Albuquerque, N. M.
Dr. C. B. Batson, McLean, Texas.
Dr. L. H. Barry, Corona, N. M.
Dr. C. R. Bass, Cimarron, N. M.
Dr. V. E. Berchtold, Santa Fe, N. M.
Dr. M. O. Blakeslee, Las Lunas, N. M.
Dr. Sarah Bowen, Dixon, N. M.
Dr. A. E. Brosier, Amistad, N. M.
Dr. J. A. Britton, Chicago, Ill.
Dr. R. L. Bradley, Roswell, N. M.
Dr. Robert O. Brown, Santa Fe, N. M.
Dr. C. T. Burnett, Chicago, Ill.
Dr. R. L. Butler, Clovis, N. M.
Dr. Carl E. Buck, New York, N. Y.
Dr. L. B. Cohenour, Albuquerque, N. M.
Dr. George T. Colvard, Deming, N. M.
Dr. P. G. Cornish, Jr., Albuquerque, N. M.
Dr. F. H. Crail, Las Vegas, N. M.
Dr. F. C. Diver, Springer, N. M.
Dr. J. M. Doughty, Tucumcari, N. M.
Dr. L. O. Dutton, El Paso, Texas.
Dr. C. B. Elliott, Raton, N. M.
Dr. Crum Epler, Pueblo, Colo.
Dr. Eugene W. Fiske, Santa Fe, N. M.
Dr. N. D. Frazin, Silver City, N. M.
Dr. Evelyn F. Frisbie, Albuquerque, N. M.
Dr. F. D. Garrett, El Paso, Texas.
Dr. C. H. Gellenthien, Valmora, N. M.
Dr. C. W. Gerber, Las Cruces, N. M.
Dr. M. D. Gibbs, Roy, N. M.
Dr. C. S. Hart, Dawson, N. M.
Dr. J. W. Hannett, Albuquerque, N. M.
Dr. H. F. Hadlock, Denver, Colo.
Dr. F. M. Heller, Pueblo, Colo.
Dr. G. Heusinkveld, Denver, Colo.
Dr. F. M. Howe, Las Vegas, N. M.
Dr. F. H. Ingalls, Roswell, N. M.
Dr. F. H. Johnson, Carrizozo, N. M.
Dr. R. F. Johnston, La Junta, Colo.
Dr.L. W. Johnson, Roswell, N. M.
Dr. J. J. Johnson, Mora, N. M.
Dr. George W. Jones, Clovis, N. M.
Dr. W. E. Kaser, Las Vegas, N. M.
Dr. Frank B. Kelly, Chicago, Ill.
Dr. C. F. Kemper, Denver, Colo.
Dr. W. M.Lancaster, Clovis, N. M.
Dr. A. S. Lathrop, Santa Fe, N. M.
Dr. G. P. Lingenfelter, Denver, Colo.
Dr. W. H. Livingston, Santa Fe, N. M.
Dr. W. H. Lovelace, Albuquerque, N. M.
Dr. Wallace P. Martin, Clovis, N. M.
Dr. E. A. McIntyre, Santa Fe, N. M.
Dr. C. W. Mayo, Rochester, Minn.
Mr. George A. McAlmon, El Paso, Texas.
Mr. John H. MacWhorter, El Paso, Texas.
Dr. C. C. Meacham, Albuquerque, N. M.
Dr. Frank E. Mera, Santa Fe, N. M.
Dr. R. W. Mendelson, Albuquerque, N. M.
Dr. L. M. Miles, Albuquerque, N. M.
Dr. H. A. Miller, Clovis, N. M.
Dr. V. N. Minas, Las Vegas, N. M.
Dr. C. A. Miller, Las Cruces, N. M.
Dr. Charles F. Milligan, Clayton, N. M.
Dr. N. T. Moore, Las Vegas, N. M.
Dr. H. M. Mortimer, Las Vegas, N. M.
Dr. Carl Mulky, Albuquerque, N. M.
Dr. J. W. Muir, Las Vegas, N. M.
Dr. O. I. Nesbit, Espanola, N. M.
Dr. T. E. Presley, Clovis, N. M.
Dr. G. W. Raphael, Santa Fe. N. M.
Dr. D. W. Rife, Santa Fe, N. M.
Dr. E. J. L. Russell, Santa Fe, N. M.
Dr. A. C. Scott, Temple, Texas.
Dr. T. F. Self, Roy, N. M.
Dr. Eugene P. Simms, Alamogordo, N. M.

Dr. J. A. Steel, Hatch, N. M.
Dr. A. B. Stewart, Las Vegas, N. M.
Dr. J. H. Steele, Wagon Mound, N. M.
Dr. D. D. Swearingen, Roswell, N. M.
Dr. L. A. Thompson, Springer, N. M.
Dr. Robert F. Thompson, El Paso, Texas.
Dr. John Vaughn, Amarillo, Texas.
Dr. S. G. VonAlmen, El Paso, Texas.
Dr. F. D. Vickers, Deming, N. M.
Dr. W. W. Waite, El Paso, Texas.
Dr. L. H. Wear, Denver, Colo.
Dr. A. E. Winsett, Amarillo, Texas.
Dr. J. P. Williams, Roswell, N. M.
Dr. D. B. Williams, Santa Fee, N. M.
Dr. William H. Woolston, Albuquerque, N. M.
Dr. William H. Worthington, Roswell, N. M.
Dr. M. K. Wylder, Albuquerque, N. M.

It is regretted that the names of the visiting ladies are omitted, but through an oversight they were not registered.

ARIZONA STATE MEDICAL ASSOCIATION PROCEEDINGS

(Continued)

REPORTS OF OFFICERS AND COMMITTEES

Secretary's Report

The office of the secretary has busied itself with memberships, much correspondence, and during the Basic Science Referendum campaign, much time and effort was expended, in conjunction with our very able Committee on Public Welfare. That Committee is to be highly commended for their tireless efforts. A passing comment may be made of the lack of moral and financial support on the part of a few of the outstanding practitioners in the state.

As pointed out in the report of the Medical Defense Committee to the Council, the secretary wishes to call attention to the matter of continued protective insurance. Several letters have been received from physicians over the state, requesting information regarding with whom they may secure insurance.

Your secretary attended the Annual Conference of State Association Secretaries, in Chicago, in September, 1933. The proceedings of this meeting have been published in the Bulletin of the American Medical Association, although one phase, Medical Defense discussion, was omitted from the printed report on the ground that too much of it was of a confidential nature.

The secretary would remind our members that the state and national associations are just as influential as its units—the county societies—make them. Therefore, each county society should be alive to its active functions.

All our county societies except Yuma are in good standing. The total membership on June first was 235.

D. F. HARBRIDGE, Secretary.

Report of the Treasurer

GENERAL STATEMENT

Total Receipts All Sources:			
Balance General Fund April 13, 1933		$ 1,611.32	
Dues 1933-34, 322 members at $12.50		4,025.00	
Refund, Basic Science Committee		84.58	
Defense Fund, Balance in Savings Bank April 13, 1933	$2,022 18		
Coupons and Interest	694.71	2,716.89	
United States Bonds		15,000.00	
Total Receipts All Sources			$23,437.79
Total Disbursements All Sources:			
From General Fund		$ 2,137.74	
From Defense Fund, Savings Bank Account, check tax		.02	
Total Disbursements All Sources			2,137.76
Total Balance All Funds			$21,300.03

ANALYSIS AND STATEMENT BY FUNDS

1. General Fund:

Receipts

Balance in Bank of Arizona April 13, 1933	$ 1,611.32	
322 members at $12.50	4,025.00	
Refund Basic Science Committee	84.58	
May 23, 1934, from Defense Fund for Medical Defense expense	117.30	
		$ 5,838.20

Disbursements, Duly Authorized, Paid from General Fund

St. Louis Button Co., badges	40.14
Dr. George Truman, Basic Science Committee	100.11
C. E. Yount, Treasurer's expense	50.00
D. F. Harbridge, Secretary's expense	60.00
Southwestern Medicine, (reporting 1933)	100.00
Southwestern Medicine, 220 members at $2.00 (1933 Subs.)	440.00

Dr. C. C. Craig, Basic Science Committee	12.00	
D. F. Harbridge, Basic Science Committee	4.06	
James A. Walsh, Basic Science Committee	150.00	
A. C. Taylor Printing Co., programs	33.92	
Martindell, Horne & Co., Treasurer's bond	30.00	
A. C. Taylor Printing Co., stationery	22.25	
D. F. Harbridge, Secretary's expense	60.00	
Bank of Arizona, Safety Deposit Box	3.30	
A. Cruikshank, flowers	10.15	
George C. Truman, Basic Science Committee	79.00	
D. F. Harbridge, Welfare Committee	100.00	
D. F. Harbridge, Public Health League	200.00	
Tucker & Morgan, Medical Defense	8.00	
Donofrio Floral Co., flowers	5.08	
D. F. Harbridge, refund telegraph	5.11	
A. C. Taylor Co., membership cards	3.50	
R. J. Stroud, refund telegrams	5.04	
Jas. J. Riordan, refund membership dues	12.50	
Sloan, McKesson & Scott, 1933 retainer	100.00	
Southwestern Medicine, 235 members (1934 Subs.)	470.00	
Dr. G. H. Fitzgerald, postage	3.00	
Martindell, Horne & Co., Treasurer's bond	30.00	
Defense Fund, 321* members	1,926.00	
Check taxes, 29 checks	.58	4,063.74
May 23, 1934, Balance in Bank of Arizona		$ 1,774.46

2. Defense Fund:

Receipts

Balance in Savings Bank April 13, 1933	$ 2,022.18	
Interest, June 30, 1933	34.19	
December 31, 1933	35.52	
Coupons, U. S. Bods, June 21, 1933	312.56	
April 12, 1934	312.44	
From General Fund, 321* members at $6.00	1,926.00	
		$ 4,642.89

Disbursements

Bank of Arizona, Safety Deposit Box	$ 3.30	
Tucker & Morgan, stenography	8.00	
Sloan, McKesson &Scott, 1933 retainer	100.00	
One member, dues refunded	6.00	
Check tax	.02	
Transferred to General Fund, May 23, 1934		711.32
May 23. 1934, Balance in Yavapai County Savings Bank		$ 4,525.57

* Error in membership count, of one member, not discovered until after the transfer of funds. One member to be added to transfer to Defense Fund next year.*

EARNINGS OF DEFENSE FUND AND BONDS SINCE LAST REPORT:

Boods, coupons June 21, 1933	$ 312.56
April 12, 1934	312.44
Savings Account, interest June 30, 1933	34.19
Dec. 31, 1933	35.52
	$ 694.71

UNPAID EXPENSE FOR 1934:

Secretary's Office expense	$ 120.00
Treasurer's Office expense	50.00
Stenographer Annual Meeting 0	100.00
Annual retainer, Sloan, McKesson and Scott	100.00
	$ 370.00

RECOMMENDATIONS:

Our paid-up membership for 1933-34 is 322, an apparent gain of 100 members. However, analyzing these figures, it is noted that 100 members failed to pay their dues last year until after the books were closed. There is no actual gain in membership. Your Treasurer recommends that dues be continued and pro rated as last year $12.50.

Our balance in the Medical Defense Savings Account is $4,525.57. I recommend that we purchase $3,000.00 of United States bonds, the best obtainable.

This year we contributed to the Welfare Committee $645.17, of which $84.58 was returned. In view of the fact that this is a legislative year and we will likely be called upon to again contribute to the Welfare Committee, this item should be budgeted.

C. E. YOUNT,
Treasurer.

Report of Medical Defense Committee

Your Medical Defense Committee has the following report to submit for the year 1933-1934:

Four cases in all, one set for trial, one waiting for trial date, one not entered, one tried which is of interest but not a malpractice case.

Kendig vs. Victor Randolph, for recompense for a donor of blood. This case was not defended by the Medical Defense Committee for the reason that malpractice did not enter the situation. Yet, it is a matter of considerable importance to all practitioners of medicine. It emphasizes the fact that, in the absence of a definite understanding, a physician who engages a donor of blood, a nurse, hospital accommodations, laboratory facilities, and so forth, is understood to be responsible for the hiring of such services and is, therefore, liable for their remuneration.

Gilbert vs. Dr. J. J. McLoone, amount $75,000, nasal operation, trial set for Nov. 13, 1934.

Schiller vs. Dr. George Gooodrich. Fracture, date of trial not set. Instructed verdict for defendant since report was made.)

Jerome vs. Dr. Thos. Woodman, threatened suit, attorney letter. Letter disregarded. To date no suit entered.

Pavell vs. Sweek case is believed has been definitely disposed of.

During the past year all medical protective insurance has been withdrawn from Arizona. Recently a new company, "The Glens Falls Co." has come into the field. They may continue, but if we are to use the experience of other companies as a guide they are likely to follow these companies and withdraw.

The Medical Defense Committee has two comments to make: (1) In view of the precarious situation in the field of medical protective insurance for Arizona physicians, it seems to the committee that every physician should afford complete cooperation financially and by moral support so that our resources may be as strongly entrenched as possible.

(2) The advisability of establishing an indemnity fund should be investigated and, if feasible, plans laid for such an undertaking.

The financial report will be submitted by the treasurer.

The following comment by the association's counsel (Sloan, McKesson & Scott) is a part of this report:

In looking through the various law reports, it would appear that Arizona has been freer the past years from malpractice cases than any other state in the Union. We can only attribute this to the vigorous manner in which your Association has defended such cases in the past. It is an old maxim among attorneys that the best way to prevent new cases being filed is to have verdicts for the defendants in cases which are tried, and no small part of the success in past litigation as well as the comparative freedom from such suits at the present time has been due to the constructive performance by your Association.

Yours very truly,
SLOAN, McKESSON & SCOTT.
By Greig Scott.

Report of the Committee on Medical Economics

The Committee on Medical Economics has no data applicable to Arizona more than elsewhere. The chairman appointed a few months ago, vice Dr. Watkins, who was unable to continue with the work, has since his appointment endeavored to digest a little of the vast literature on the subject. The Committee believe that every physician in the state should be cognizant of the high spots of what is going on elsewhere and of what is being said on the subject.

Special problems exist in Arizona which should be investigated. To do this a permanent committee should be named. This we recommend. We hold that in studying the question of changes in medical practice, including the remuneration of physicians, the welfare of the patients and of the public is of first consideration. What is best for each patient and for all patients is best for the physicians. If it be discovered that there are physicians whose incomes are inadequate, consideration should be given thereto.

There are certain fundamentals to the problem. The cost of sickness is overwhelmingly great for a considerable portion of the population. Civilization uniformly holds that the health of every individual is of public concern and responsibility, especially since the malady of one may be disseminated to others; and medical science should be available with all its advancements to those in any and all strata of society and in the most inaccessible areas.

It seems axiomatic that the general practitioner is the hub of the wheel especially in therapy and often in prevention of disease and in hygiene and sanitation; the consultants are the spokes to be frequently and easily contacted and used.

There is an unmistakable demand that there be changes in the present general system of medical economics so that all persons, irrespective of financial status, may have such medical attention as is necessary to prevent preventable disease, to cure as speedily as possible all curable disease and to alleviate to a maximum all non-curable disease. That there will be change is proven by the changes which have relatively recently taken place. Vast numbers of the World War veterans, though handsomely pensioned and often financially independent, are given free medical care; schools have physicians; industries have surgeons, the Sheppard-Towner law has provided for work in the field of infant mortality; sanitation and the care of tuberculosis and insanity have long been government functions; in 1931 seventy-three per cent of hospital beds were provided by government agencies.

The demands for further changes are being voiced, in the main, by various sociologists, philanthropists and policitians. It is impossible to ascertain just how widespread is the demand. Whether any of the demands actually come from a medically neglected public or not is problematic. It is probable that the demands are being made by certain altruistic individuals who see that a portion of the public is not getting the medical attention which it should have and deserves, and by certain selfish individuals who see the rich field for graft that might be developed by a system of socialized medicine.

The changes demanded do not have to do with

(Continued on page 314)

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The Coming Southwestern Meeting

November 22-24

Dr. James J. Gorman, of El Paso, is the Chairman of the Program Committee for the Twentieth Annual Meeting and Clinical Conference of the Medical & Surgical Association of the Southwest. The details of the program will be announced in next month's issue. The proposed plan for this year's meeting will include a half day's discussion of economic questions and other matters outside of the consideration of purely medical and surgical problems. Outstanding leaders in the profession, who have given time and study to these problems will be asked to present their ideas.

The clinical program will be featured; they will be essentially teaching clinics with eminent clinicians and surgeons cooperating with the members of the El Paso County Medical Society to work out problems on cases which will be demonstrated.

The program will not be over-crowded with papers, and those presented will be selected so that they will integrate with the whole program.

Watch for the October Journal

After many months of preparation the special issue of this journal dedicated to Northern Mexico will appear next month. It will carry its leading article in Spanish with a parallel English translation. The author is a prominent surgeon of Guadalajara. Most of the remaining material will be by Americans who are practicing in Mexico. The journal will be distributed to all the practitioners of the northern states of Mexico, namely, Sonora, Chihuahua, Coahuila, Durango and Sinaloa.

This October issue frankly aims to present the claims of the Medical & Surgical Association of the Southwest to all the practitioners of this geographical district, in an effort to further the re-organization movement of that society. It will carry the program of the El Paso meeting of the Association which will be held Nov. 22, 23 and 24.

Watch for it!

The Industrial Relations Committee of the Arizona Medical Association

One of the highly constructive actions of the last convention of the Arizona State Medical Association was the appointment of a Committee on Industrial Relations. This was done in response to an invitation from the Arizona Industrial Commission, as set forth in the resolution printed elsewhere in this issue.

This Committee has already organized and is actively at work, with regular monthly meetings. Out of their first meeting came a revision of the fee schedule of the Commission, placing the fees back on the old 1932 basis. An increasing number and variety of problems are being referred to this committee and their work will certainly grow in importance as they become familiar with all phases of Workmen's Compensation. The Commis-

sion has shown every disposition to listen to their advice on medical problems, both general and specific. The Committee, at present, consists of two surgeons of mining corporations, one orthopedic surgeon in private practice, one general surgeon in private practice, with the president of the Association who is also a general surgeon in private practice.

With the renomination of Governor Moeur, and the almost certainty of his election, there will probably be no change in the personnel or policy of the Industrial Commission during the next two years, which should allow opportunity for this Committee to demonstrate its usefulness.

The Industrial Commission will publish a monthly Bulletin with a medical section, giving the proceedings of this Committee and other important and interesting matters from the medical side of Workmen's Compensation.

Governor Moeur Will Continue

The nomination of Governor Moeur for a second term almost certainly means his election,—as it is hard to imagine a political upheaval of sufficient magnitude to bring a Republican victory in Arizona this year. We believe thoroughly in the doctor's honest and earnest desire to improve conditions in Arizona,—and we believe these qualities will manifest themselves with increasing force during his second term as governor. If mistakes have been made during the past two years, we believe they were mistakes of judgment which any man holding a high public office for the first time is bound to make. If there has been graft and extravagance we do not believe it has been with Governor Moeur's knowledge and consent, and these will tend to disappear as increasing experience brings to him a familiarity with the intricacies of politics, for the outstanding quality of the governor is fearlessness and a determination to "hew to the line and let the chips fall where they may."

What's Wrong With the Chesterfield Ad

One of our observant readers has called attention to the probability that the fabricator of the Chesterfield ad of last month evidently never knew the joy of driving his best girl "down a shady lane" in a horse and buggy, and to those of us who have experienced that pleasure in days long past, his objections are valid.

The editor would like to say, in passing, for his personal vindication, that the advertising pages of the journal are under different management from the editorial section. If the editor could follow his own preference in the matter, he would not advertise tobacco in a medical journal. However, he would like to pay his compliments to the young lady of this picture; that part of the illustration IS true to life. The young ladies of his courtship days never would have thought of smoking cigarettes. It is only in these latter days of fast living and loose thinking that the female of the species has developed a yen to "smell like a man," dress like a man, cuss like a man and adopt the male low standard of behavior. We salute the young lady with the parasol and her sentiment,—but not the buggy!

Our critic calls attention to the fact that this vehicle lacks the necessary step to get into the contraption, and the very essential socket with its steed accelerator without which the swain of thirty years ago would not venture far. Also, even though this couple have "parked" in the approved fashion of that day, the lines do not show the orthodox knot and are dangling in a manner which would make any man over fifty years old give a shudder of protest. Otherwise, the ad is O. K.

The Naturopathic Referendum

Appearances would seem to indicate that the naturopaths and chiropractors will take turns trying to burrow through the public health ramparts of the various states, in an effort to break these down and let in a flood of quacks who will have been made "doctors" by law. This year it is the naturopaths who will make the effort,—and should they succeed, all quacks will come in through that breach. It is only necessary to read the referendum which will go on the November ballots in Arizona, California and other states to vision what would happen, should the voters be so blind as to approve this measure.

In spite of the fact that the Basic Science Bill was passed by the legislature and approved by popular vote in Arizona, another

referendum which will entirely nullify that law has been placed on the ballot. This will be the procedure through the years, since the "chiro-quacks" and the "natural paths" have everything to gain and nothing to lose in their perennial effort to break down our public health laws. The public pays for their efforts; if they win the public loses; if they lose this time, they start in to get ready for the next election. Like the boy who walked down the street getting his dollar changed into dimes and back; the public will some day be asleep and make the mistake of passing the referendum. Medical quacks can only thrive where the people are ignorant or indifferent.

The West Welcomes Warnshuis

For those provincials of the Atlantic Coast who look upon Pittsburgh and Rochester, as "out west" it will perhaps sound strange to hear that Warnshuis of Michigan will be moving to the west soon. However, since Detroit is twice as far from San Francisco as it is from New York, for the Pacific Coast resident it is decidedly "east." It is no doubt true that the whole medical profession "sat up and took notice," when the announcement went out that the California State Medical Association had induced Dr. Warnshuis to accept the post of Secretary-Treasurer, vacated by the resignation of Dr. Emma Pope. There is probably no State Association where a Secretary-Treasurer can be kept busier than in California. The profession of that state has to meet more concerted, vicious and highly organized attacks than any other part of the country,—not even excepting Illinois. Under Dr. Pope, the profession of that state has been welded into an harmonious unit, so that Dr. Warnshuis's work will not be one of rebuilding from within, but the important task of leadership in defensive and offensive warfare with the multifarious cults and thousand and one "isms," with which the state is infested.

Knowing Dr. Warnshuis' abilities and achievements in many positions of responsibility and having watched him in action in the House of Delegates and in the Annual Secretaries' Conferences, we know that an interesting time is in store for all concerned.

We join the Pacific Coast in welcoming to his new field of labours "out west," Dr. Frederick Warnshuis of Michigan.

ARIZONA STATE MEDICAL ASSOCIATION PROCEEDINGS

(Continued from page 311)

the kind of medical attention attainable; for so far as I have read, there is no demand that quacks and others now making a "racket" of the healing art be eliminated, but the demands simply refer to the method of remuneration for medical attention. Group payment instead of individual payment of physicians seems to be the essence of what is demanded.

Physicians would probably have no objection to, in fact would certainly welcome, such a change if there could be an assurance that there would be no abuses of the public or of the profession.

Those who argue loudly, and often sarcastically for a change, say: Even in prosperous times many hundreds of thousands needing medical attention do not have it; millions need dental work and do not get it; less than seven per cent of our population have even partial physical examinations each year; the shocking conditions disclosed by the examinations of the drafted men for the World War prove that universal examinations and advice based thereon are needed; less than five per cent of the population are immunized against diseases that may be successfully inoculated against; those who have the most illness are the least able to pay; notwithstanding that thousands of cases of home illness would do better if hospitalized, only one of three of the beds in private hospitals has been regularly occupied; illness is unpredictable; it comes often as a calamity; a family with nothing or next to nothing in the budget or in reserve may have a child, or perhaps the wage earner, desperately ill for months or even years; an insurance fund should pay for the proper care for such calamitous illnesses, just as an insurance fund may pay for the loss of the wage earner in case of his death or for the loss of a business in case of a fire, cyclone or other terrible unpredictable accident; reform comes often from without; economists rather than bankers had to write and push through the Federal Reserve Banking system, for bankers were the last to act, and now the bankers could not be persuaded to do without the system; thus it has been with numerous groups; the legal profession will have to have outside help to get the changes needed in the practice of jurisprudence; the medical profession is in the same boat, but the changes must come; when they have come, the medical profession will never be persuaded to go back to the present archaic system; a large portion of the medical men are not being adequately remunerated and the proper change would rectify this; the medical men have the erroneous attitude that none but medical men should have any say as to the changes that may come, whereas the paying public should have the say about the paying; the medical profession has sufficient to do to see that the highest grade of scientific medicine is practiced; in the countries where the change to group payment in place of individual compensation has actually been brought about, not one doctor in a thousand wishes to go back to a former system; a large amount of medical work has already been appropriated by the state or by the nation (73% of the hospital beds in 1931 in the U. S. were supplied by public funds); the acquisition of medical work by our governments so far was chiefly without definite planning on the part of the medical profession; the steps from now should at least be guided by organized medicine; any other program is fatal or at least dangerous; the arguments used against State medicine by its opponents are weak; the American Medical Associ-

ation is unduly antagonistic; these and other statements are being made by those who favor changes in our medical economics—to insurance, savings, socialized medicine, state medicine, or what not.

The opponents to so-called state medicine and to steps in that direction say:

Going further than the present set-up means eventually complete socialization of medical practice; if the wealthy have to pay the medical bills of the poor they will demand to have rates commensurate with those given the poor and this may best result from state medicine for all classes; politics will enter into the administration of the funds and will have markedly untoward influence upon the actual treatment of disease; physicians will be unable to be free agents in directing the treatment of cases; the sums paid medical men will be squeezed so that there may be more for politicians; corruption in the handling of the vast sums is certain to prevail; free choice of physicians will be done away with; competing organizations will solicit for patients and will carry on other practices, from the standpoint of public welfare, highly unethical and altogether undesirable; there is likely to be a lack of interest and hence a deterioration in the type of medical work performed; patients will suspect physicians of being shiftless and careless; marked disturbance of that necessary cordial, understanding relationship between patient and physician is certain to result; staff members and "outside" physicians will be in constant conflict; the dignity and individuality of the physician will be harmfully affected; the insuring organizations will control the medical profession and will reduce them to positions of employees managed and directed by the insuring companies; unwarranted demands for medical attention and for hospitalization will be common; physicians will be over-suspicious of ulterior motives in their patients; the schemes already proposed do not take into consideration the care of epidemics, chronic illnesses and the incapacities of advanced years; there will be a general disorganization of organized medicine and frustration of general plans for improving medical practice and scientific medicine in general; a change comes in the psychology of patients because so much attention is given to sickness that every little indisposition, which even those in the best of health have and which are the worse for treatment, will be magnified into something worth a visit to the physician; because patients become unduly suspicious of the physicians there is danger that cultists and quacks in general will thrive all the more than at present and cost the public all the more; this has actually happened in certain lands; under certain systems physicians are forced to do detective and other police duty; physician control of the insuring organization is possible but improbable; the International Labor Organization is a powerful propagandist for compulsory sickness insurance; when compulsory sickness insurance is once a going concern, no matter how miserable its administration and results, political rings will have such control that a repeal of it will be next to impossible; morbidity risks vary so greatly that morbidity tables on which to predict the costs of treatments are impossible to construct; the variations are due so often to the effects of economic and industrial situations and changes upon the emotions and desires of the insured rather than to recognized pathologic changes; mortality rates have not been reduced by insurance schemes in any land."

The concluding paragraph of the April, 1934, American Medical Association Bulletin on "A Critical Analysis of Sickness Insurance" reads as follows:

"All this does not prove that there is no need for appropriate arrangements to assist low income classes in meeting the unequal burden of medical care, but the facts cited do seem to justify the conclusion that all schemes developed by laymen from patterns formed by an industrial and commercial environment have made small contributions to the solution of that problem. Whatever progress has been made toward a solution has been made through the efforts of professional associations and generally through a bitter fight with lay administrators."

A study of the literature on the subject of sickness insurance leads one to several conclusions, to-wit: There is not the dire need in this country for illness insurance as has existed in other nations, because the people in the lowest income groups have medical attention far superior to that of the lower classes in the countries where and when insurance schemes were inaugurated; nevertheless, the medical attention given a considerable part of our population is far from ideal, or the burden of payment falls too heavily either on them or on the physicians who are often left holding sacks for a large medical bill; notwithstanding the fact that illness is not predictable in either type or amount, it often strikes with catastrophic seriousness and it would seem that families deserve to have their burden shared as is done in ordinary insurance against other and often less serious catastrophies; it would seem also that some sort of scheme could be worked out that would be practical; whatever the plan, organized medicine must have every consideration in its management; physicians must not be placed in the position of being mere hirelings of lay organizations; patients must have free choice of physicians—except where too great hardship is worked upon the remuneration funds or upon physicians; probably it would be wise to make the patients pay a certain proportion of the charges they engender for services and also for drugs and other supplies; it would seem that a definite limitation must be set on the income group which is insurable; beyond a certain income the insurance should not be available; below this income the insurance should be compulsory; sickness and accident indemnity must in no wise be associated with the scheme of illness insurance.

One question has been suggested: Were all our people paid adequate wages, and assured of regular work, would not the problem of paying for sickness have a near solution without the dangerous irreversible step of compulsory sickness insurance?

ORVILLE HARRY BROWN, Chairman.

Report of the National Legislative Committeeman

During the past year several items of national legislation have been presented before the Congress which affect physicians materially.

For several years the Committee of Jurisprudence of the American Medical Association has been opposed to any birth control legislation. Opposition of other elements of Congress to this type of legislation sponsored by Margaret Sanger has always joned hands with the group representng the A. M. A. and it has heretofore been kept in committee. This past year, however, the bill has been brought out of committee and will, therefore, go through the regular channels and the opposition will have to come from individual members of both houses. The proponents of this legislation are very active in seeking support of friends, to urge them to write or telegraph their senators and representatives. That part of the profession that agrees with the American Medical Association should be appraised of these facts and act accordingly.

All of the benefits that were taken away from veterans by the president's Economy Act of last year have been restored by the Steiwer-McCarren bill which passed both houses, was vetoed by the president and then passed over his head. In my last report, I told of the effect of the president's Economy Act in caring only for veterans whose disabilities were clearly service connected, and some of the legitimate patients found their way back to medical offices. However, pressure of veterans became increasingly persistent in an election year. The gist of the thing is that votes count more than justice in the minds of legislators. In this connection, on the advice of Dr. E. H. Cary, chairman of the Committee on National Legislation, the following telegrams were sent to our three representatives in congress as well as the speaker of the house.

"HB bill sixty six sixty three up for consideration today stop. Adequate hospitalization now available to veterans, stop. The president has indicated veto unless senate amendment is rejected, stop. Please use every effort to reject such amendment. (Signed) R J. Stroud, chairman, National Legislative Committee, Arizona State Medical Association.

A telegraphic answer was received from Senator Ashurst, and a letter from the Speaker, The Hon. Henry T. Rainey, which are attached to this report.

As predicted in the telegram the President did veto this, but the legislation went through.

It is my recommendation that the Congress be asked to make provision to have local physicians and surgeons take care of veterans and pay the veteran a sufficient amount to care for this fee, or pay small fees directly to physicians. I believe the president has this in mind. With the expansion of hospitals possible under the present set up of men being employed, it means more spread of "State" or "Federal" medicine as time goes by. Veterans' Administrator, Frank T. Hines, is sympathetic with the physicians, and in response to Senator Hayden gave me assurance in December that the president would veto such legislation and thought such legislation was in check. The correspondence is attached.

The American Medical Association will not have to sign or make a code but has determined to live up to the recommendation of the NRA.

The Federal Emergency Relief Administration in some cases has offered inadequate fees, but the profession as a whole have made no complaint as the cooperation of all is needed and money for food and shelter must come first. "Organized medicine has a good deal to be thankful for in that its members cooperated to help along the needy.

The relief afforded medically to the needy under the Federal Emergency relief is not now abandoned, contrary to general belief.

Under Federal Civil Works Administration every employee became an employee of the Federal government, and provision was made for disabling injury and death accordingly. Only traumatic injury while in the performance of duty is dealt with in this fashion, and paid for by the government on forms supplied for the purpose.

When first the Act became operative, some 4,000 physicians were designated to care for the sick and injured, but the A.M.A got together with the Commission so as to have adequate help afforded to those who were injured or sick, and so all members were to be given an equal opportunity to care for this type of practice. The situation is now becoming one of diminishing importance as other methods have come into play.

Federal control of liquor has been abandoned as far as the medical man is concerned and has now been passed back to the various states.

A bill S. 2660 to regulate broadcasting in the United States of material originating in a foreign country has passed the Senate. It has been favorably reported in the House and is on the calendar. It will do a lot to prevent quackery in radio broadcasting.

In closing, I wish to point out that a hospital has been erected by Federal funds in Maricopa county, which if made into a Veteran's Hospital will add further to the number of beds available, and of which there have been adequate in the past.

R. J. STROUD,
Chairman, Committeee on National Legislation.

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Report of the Cancer Committee

As chairman of the Cancer Committee of the Arizona State Medical Association, wish to report upon our activities during the past year.

Immediately after the appointment of the committee I requested all of my committeemen to put on an active campaign through the medical profession, getting all doctors in their districts to make special examinations of the breast in order to detect early and curable cancer, and asked that they use transillumination as an aid in the examnation.

I called a meeting of the committee which was held in Phoenix, September 9th. Dr. R. D. Kennedy, Dr. C. S. Kibler, and Dr. W. W. Watkins attended. At this meeting the importance of an active campaign was stressed, and the committeemen were requested to carry on an educational campaign to the laity, the Civic Clubs, Women's Clubs and the Parent-Teachers' Associations.

The Maricopa County Medical Society and the Pima County Medical Society both approved the formation of cancer clinics in their jurisdiction. Cancer clinics have been formed and are operating

successfully in Phoenix, Tucson and Prescott.

In Gila county all the cancer cases are sent to the Gila County Hospital and are seen and discussed by the staff, including practically all the practicing physicians in that county.

During the Sectional Meeting of the American College of Surgeons held in Phoenix, March 16th and 17th a Cancer Clinic was held in the Nurses' Home of St. Joseph's Hospital, which drew an interested audience of doctors and nurses. Twenty-two cases of various types of malignancies were demonstrated, in all but two, the patients themselves being present. The patients were arranged in groups according to the type of malignancy they represented but were presented singly. A brief summary of each history was read by a member of the local Cancer Clinic. When practical the lesion was exhibited and examination allowed. Following this, in each case Dr. Greenough discussed the diagnostic possibilities, and the indications and contraindications for treatment of them. The cases represented malignancies of the bladder, testis, prostate, femur, maxilla, tibia, jaw, tongue, face, eye, lip, uterus, cervix, breast, ovary, and skin. There were papillary carcinoma, teratomas, embroyonal carcinomas, sarcomas, epitheliomas, etc. There were treated, untreated, early, moderately advanced, advanced, hopeless, and cured cases.

I feel that our committee as a whole has accomplished very satisfactory results. I recommend that Dr. Harlan P. Mills, who is Chairman of the Cancer Committee of St. Joseph's Hospital at Phoenix, be appointed on the committee in Dr. Watkins' place.

E. PAYNE PALMER, Chairman.

Resolution Regarding Industrial Relations Committee

BELIEVING the medical care and physical restoration of workmen injured in the course of employment to be the essential, underlying principle of workmen's compensation, and that the physical and functional evaluation of temporary and permanent disabilities of injured workmen can be adequately determined only by members of the medical profession; and further

BELIEVING that the responsibility for such medical care and restoration of injured workmen, together with the physical and functional evaluations of their injuries, rests squarely upon the shoulders of the medical profession of the state; and further

BELIEVING that by means of an active and close co-operation of the State Medical Association with the Arizona Industrial Commission, the intents and purposes of workmen's compensation can be carried out more efficiently and more economically and more harmoniously; therefore, be it

RESOLVED by the Arizona State Medical Association that a permanent Industrial Relations Committee of five of its members be established; that said Committee be known as the Industrial Relations Committee of the Arizona State Medical Association; that the President of the State Medical Association each year automatically becomes a member and chairman of this Committee and that the other four members of said Committee be appointed by the President of the State Medical Association within a period of thirty days following the adoption of this resolution, and that said

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members so appointed serve for a period of one year or until their successors have been appointed; that said Committee be representative of the medical profession of the state, and be fully authorized to represent the membership of the State Medical Association in all questions and decisions relative to medical relations under workmen's compensation; that said Committee be further authorized to form its own organization and regulations, and be further authorized to enter into any arrangements or agreements with the Industrial Commission of Arizona, which, in the judgment of said Committee, may aid in carrying out its purposes; that said Committee keep a record of its activities and make annual reports to the Arizona State Medical Association; and be it further

RESOLVED, that the Arizona State Medical Association, through its Secretary, extend greetings to the Arizona Industrial Commission, enclosing a copy of this resolution, together with the names of the members of the Commi tee so appointed, and further to advise the Industrial Commission of the desire of the physicians and surgeons of the state to co-operate with said Commission insofar as their special knowledge and experience may be of value to the Commission in administering the Workmen's Compensation Law.

(Proceedings to be concluded next month)

WANTED — By Nurse-stenographer, position in physician's office or hospital historian. References. Address Box R. N. Southwestern Medicine.

NEWS ITEMS
(Maricopa County, Arizona)

DR. FRED G. HOLMES, of Phoenix, who has been convalescing during the past six months from a rather sudden attack of tuberculosis, has spent the time preparing the manuscript for a book on "Tuberculosis." This book is for the patient and is expected to serve the purpose of giving the tuberculous individual an outline of the methods of treating his disease and instructions for hygienic living. Its issue from the press will be watched for with great interest.

DR. LOUIS B. BALDWIN, of Phoenix, has moved to Tucson where he will be affiliated with the Desert Sanatorium. He will take up the work left vacant by Dr. Paul Holbrook who has entered private practice in the city of Tucson.

DR. GUY C. FRENCH, of Phoenix, announces the removal of his office from the Grunow Memorial to the Professional Building. His practice will give special attention to General Surgery.

DR. W. P. SHERRILL, of Phoenix, has moved his offices from his residence to the Professional Building; he will occupy the suite vacated by the removal of Dr. Baldwin. Dr. Sherrill practices the specialty of Pediatrics.

DR. FRANK J. MILLOY, of Phoenix, during the summer had an office in Los Angeles, with regular office hours four days a week. By thus attending to the needs of his own patients who were visiting on the coast, and chiseling a little off the natives, he and his family enjoyed a vacation without expense. Yes, he is licensed in California.

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CONSIDERACIONES SOBRE EL TRATAMIENTO QUIRURGICO DE LAS AFECCIONES INFLAMATORIAS DE LAS VIAS BILIARES.

DR. IGNACIO CHAVEZ,
Cirujano en Jefe
Compañia del Ferrocarril Sud—Pacifico
de Mexico.
Guadalajara, Mexico.

(Read before the Santa Cruz County Medical Society, at Nogales, Ariz, October 30, 1933.)

Observando con particular interés el desarrollo de la Cirugía Biliar durante los últimos 15 años, me han llamado poderosamente la atención dos hechos que claramente se destacan en el campo brillantísimo del progreso verificado durante este tiempo en la Cirugía, Fisiología y Patología de las Vías Biliares.

El primero, de suma importancia para nosotros, se me presenta bajo la forma de una pregunta. En nuestro medio, tan favorable bajo todos aspectos, por el clima, alimentación y condiciones higiénicas, para que las infecciones biliares y sus consecuencias sean mucho más frecuentes que en los paises y razas del Norte, ¿por qué razones son, sin embargo, relativamente raros los casos que el cirujano tiene oportunidad de tratar quirúrgicamente?

El segundo hecho, la aceptación, abandono y nueva aceptación de procedimientos quirúrgicos encaminados a curar las afecciones derivadas de la infección y su secuela natural; la inflamación y cálculos de la Vesícula y Canales Biliares.

Trataré estos dos puntos como objetivo principal de mi trabajo, terminando con una exposición suscinta de la técnica quirúrgica.

En mi concepto, no hay duda que las infecciones biliares deben ser y de hecho son, mucho más frecuentes en nuestro país que en los que están colocados fuera de los Trópicos, dado que las infecciones intestinales en general, algunas netamente tropicales y de carácter parasitario y sobretado las condiciones antihigiénicas particulares de nuestro medio, principalmente en lo que se refiere a alimentación y aguas potables, tienen que influir poderosamente en la etiología de las infecciones biliares. Sin embargo, este comentario es puramente teórico, ya que por desgracia no dispongo de la estadística necesaria para demostrarlo. A falta de estadística locales, presentaré las que he podido recopilar de autores americanos y europeos. Las cifras que presento demuestran por sí solas la fracuencia de estos padecimientos y con verdadera sorpresa me hacen pensar en cuanto más elevadas tendrán que ser entre nosotros. Graham y sus colaboradores afirman en su libro de texto sobre padecimientos biliares que, de la edad adulta para adelante, 20 a 25% tienen cálculos biliares e igual porcentaje padece infecciones biliares sin cálculos, estimando que la litiasis es más frecuente en las mujeres que en los hombres en la proporción de 2 a 5 por uno. Mentzer, de la Clínica Mayo, considera igualmente que 21.67% de los adultos tienen cálculos biliares. Hansen estima este padecimiento en 24.7% McGregor, de Nueva York, eleva esta cifra hasta 32.5%.

En 1000 autopsias estudiadas en el Hospital de la Ciudad de Viena, se encontraron cálculos biliares en 32.5%, cifra igual a la encontrada por McGregor; 59.6% con signos de Colecistopatía y en el 41.3% con evidencia patológica en los canales biliares. Riesman encuentra cálculos en un 25% de todas sus autopsias.

Si pues todo parece indicar que estos padecimientos biliares son extremadamente frecuentes, ¿por qué razón no son tratados qui-

rúrgicamente, entre nosotros, como debieran serlo? Existen varias causas que explican este atraso en la aplicación de principios terapéuticos quirúrgicos modernos actualmente aceptados en el mundo médico y que se han derivado científicamente de la experiencia de los últimos 20 años, en cuyo período se puede decir que la Cirugía Biliar ha pasado de la época experimental a la práctica diaria del cirujano moderno.

La dificultad para el diagnóstico correcto de las afecciones biliares inflamatorias representa desde luego uno de los escollos principales, que hace que tanto el internista como el cirujano poco familiarizados con la sintomatología de estos padecimientos, que se refleja a distancia sobre los órganos vecinos y muy especialmente sobre el estómago y duodeno, hasta el grado de simular enfermedades propias y localizadas en estos órganos, no vacilen sin embargo en asentar firmemente el diagnóstico de úlcera gástrica o duodenal, o bien alguno de los numerosos trastornos funcionales comprendidos en el cuadro de las dispepsias, etc. Uno de mis maestros, el Dr. Smithies de Chicago, afirmaba hace algunos años que en su experiencia como gastro-enterologista encontraba que en 75 u 80% de los casos diagnosticados úlceras del estómago u duodeno y referidos a él como médico consultor, había encontrado que se trataba de padecimientos biliares inflamatorios, con su acostumbrado cortejo sintomático reflejo sobre estómago o duodeno.

La consecuencia natural de esta dificultad en la interpretación adecuada de la sintomatología de las afecciones inflamatorias biliares, tiene que ser necesariamente un diagnóstico erróneo y un tratamiento ineficaz. Los enfermos así tratados serán catalogados definitivamente como dispépticos crónicos y condenados a ser paseados para siempre por el ilógico campo de la polifarmacia, persiguiendo únicamente el alivio de un síntoma y dejando sin atacar en lo más mínimo la causa, que necesariamente seguirá su marcha invasora hacia órganos vitales como el hígado y el páncreas. Cuando esto ocurra será ya demasiado tarde para pretender impartir auxilio eficaz a estos enfermos.

Numerosísimos son los casos que han sido llevados a la mesa de operaciones para ser tratados quirúrgicamente de lo que se creía una úlcera y que se descubrió en su lugar una litiasis biliar, una simple colecistitis con lesiones inflamatorias extendidas a los conductos biliares o bien únicamente adherencias gástricas o duodenales como secuela de estos mismos padecimientos biliares crónicos.

Errores de diagnóstico, errores de tratamiento; he aquí dos elementos clínicos de significación tremenda y especialmente importantes por sus consecuencias a distancia en el cuadro de las infecciones del trayecto biliar. Por qué razones son especialmente importantes estas consecuencias a distancia? Veamos la marcha ordinaria de una colecistitis primitiva y analicemos la marcha del proceso infeccioso. El germen infectante puede llegar a la vesícula a través del sistema "Porta," a donde pasa directamente del intestino para ser acarreado al hígado, siendo eliminado luego en la bilis que se almacena en la vesícula, infectándola, o bien puede llegar a este recipiente por la redolinfática de la región que es especialmente rica alrededor de los canales biliares y mucho menos en las paredes vesiculares. También pudiera llegar la infección, aún cuando muchos lo niegan, directamente contra-corriente por propagación del duodeno a través del colédoco. Dadas las condiciones anatomo-histológicas y fisiológicas de la vesícula, podemos decir que es un recipiente excelente para la infección, lo que, añadido a contaminaciones sucesivas repetidas constantemente, nos hacen afirmar que una vez que ha sido infectada, la curación o erradicación del proceso inflamatorio es poco menos que imposible con los medios terapéuticos médicos de que actualmente disponemos. El proceso inflamatorio sigue su curso, la vesícula es transformada patológicamente en todo su espesor y su contenido cargado de gérmenes que se vacía irregularmente en el colédoco, infecta los canales biliares que a su vez sufren la acción patológica del germen infectante. La infección sigue más adelante y por extensión directa o indirecta y, dadas las relaciones anatómicas tan estrechas entre estos canales y los órganos cercanos, pasa a infectar al páncreas, en primer lugar, al hígado y después produciendo reacciones inflamatorias de periduodenitis y su consecuencia las adherencias, modifica el funcionamiento fisiológico de este órgano y del estómago. W. Mayo considera

que la pancreatitis se observa en una proporción de 7% en las litiasis vesiculares y de 27% en las del colédoco.

Cuando la infección se ha generalizado en esta forma, ¿como es posible pretender curarla por medios al alcance del internista o bien con la extirpación de la vesícuula biliar que en un tiempo fué la causa y que ahora no es sino un síntoma sobreagregado al cuadro de la infección generalizada? Además de la razón, la experiencia de los últimos años demuestra que es imposible.

La experimentación y el estudio más profundo de la patogenia de las infecciones biliares han venido últimamente a deslindar con bastante precisión los campos de acción del médico internista y del cirujano. El internista poco o nada familiarizado con la marcha del proceso inflamatorio primitivo, se obstina por largo tiempo (frecuentemente varios años) en su tratamiento médico que, algunas veces, puede simular al enfermo la ilusión de mejoría y cuando al fin se ve forzado por el convencimiento de que el paciente no reacciona ya a su terapéutica, sino que al contrario, todo parece indicar el progreso del mal, recurre al cirujano y éste, a su vez, participe en muchísimos casos de la misma ignorancia, practica una simple Colecistectomía por haber encontrato cálculos o evidencia de infección vesicular, quedando con la creencia y satisfacción de conseguir una curación segura para el enfermo.

El internista ha obrado mal en retardar el auxilio quirúrgico que en el principio del padecimiento seguramente hubiera curado el mal, y el cirujano igualmente ha puesto de manifiesto su escaso juicio quirúrgico al aceptar tratar por ese sencillo medio un caso tan complejo. El internista acusará al cirujano del fracaso clínico después de su intervención y este, a su vez, señalará al internista como responsable, puesto que demoró su intervención por largo tiempo, dando así oportunidad a la infección, en un principio localizada, para que se extendiera a las demás vías biliares y órganos cercanos.

La consecuencia de esta mutua acusación en forma de círculo vicioso, se desprende con toda claridad y constituye el precepto clínico que rige actualmente el tratamiento de las infecciones biliares. Después de un tiempo razonable de tratamiento médico, si no se obtiene una mejoría manifiesta, debe recurrirse imprescindiblemente a la cirguía como único medio que puede curar radicalmente el mal y evitar las graves consecuencias de la extensión de la infección a las vías biliares, hígado y páncreas. Cuando desgraciadamente es en un período avanzado que se recurre a la cirugía, el cirujano debe ser consciente de la complexidad del caso y recurrir sin vacilar a los medios que la cirugía moderno pone a su alcance, sin pretender curar al enfermo con una simple Colecistectomía brillantemente ejectuada, sino más bien por medio del drenaje biliar prolongado, ya sea directamente de la vesícula biliar por una Colecistostomía o por la Coledocotomía, previa extirpación de la visícula y minucioso examen del colédoco eu todo su trayecto.

Debemos aceptar actualmente que está ya lejano el día en que se discutía si los cálculos biliares serían o no la manifestación de un proceso patológico, ya que con frecuencia se descubrían en una autopsia en individuos aparentemente sanos. Tanto el internista como el cirujano están de acuerdo sobre su significación patológica y clínica. La litiasis biliar puede existir en algunos casos sin dar síntomas de consideración; pero no por eso debe eximirse a este enfermo del tratamiento quirúrgico forzoso, una vez el diagnóstico hecho, puesto que sabemos por las estadísticas la relación de la litiasis al cáncer, así como la aparición súbita de síntomas muchas veces agudos, en estos casos de litiasis de evolución lenta y oculta, e irremediablemente este proceso calculoso representa necesariamente la resultante de la infección crónica de la visícula o canales biliares. Pauchet lo dice con su claridad acostumbrada: los que sostienen que no se debe operar la litiasis biliar mientras no haya síntomas que forcen la intervención, proponen una operación sumamente seria con mortalidad muy alta, en lugar de otra completamente benigna con mortalidad de 0.50%, como sería si la intervención se practicara luego que el diagnóstico ha podido ser hecho sin esperar a la aparición de complicaciones.

En mi concepto, las causas por las cuales la cirugía moderna no se ha podido abrir en nuestro medio el lugar que necesariamente le corresponde en el amplísimo campo terapéu-

tico de las afecciones biliares inflamatorias, son: en primer lugar, su difícil diagnóstico para el médico no preparado y, después, los errores terapéuticos mutuos tanto del internista como del cirujano, errores lamentables bajo todos conceptos en un tiempo en que se puede decir que en el mundo médico este tema constituye el tópico de actualidad, y que ponen de manifiesto, posiblemente, un grado no muy elevado de cultura médica.

El siguiente punto de mi trabajo se refiere a la evolución de los diversos procedimientos quirúrgicos, en relación directa y lógica con los nuevos conocimientos sobre la patogenia de las afecciones biliares inflamatorias.

Durante mi internado en el Hospital Augustana, desde 1917 a 1922, pude observar con singular interés lo que puedo llamar la aurora de la cirugía biliar. En el transcurso de nuestros estudios para adquirir el título de Doctor en Medicina y durante nuestros 4 años de internado en el Hospital Civil de Guadalajara hasta 1916, la cirugía y en general todo lo referente a vías biliares permanecía rodeado de misterio y obscuridad: durante ese tiempo, jamás presencié una intervención sobre las vías biliares.

Se explica naturalmente mi gran sorpresa e interés cuando, al ingresar como interno en uno de los principales Hospitales de Chicago, a cargo del Prof. Ochsner, durante el año de 1917, me encontré súbitamente con que la cirugía de la vesícula biliar no sólo se practicaba corrientemente, sino que era una de las operaciones más frecuentemente practicadas, en relación con las demás intervenciones en un medio hospitalario no especializado.

La operación que se practicaba casi rutinariamente era la colecistostomía y, muy rara vez, entonces, la extirpación vesicular. El diagnóstico en estos casos se concretaba a infección de la vesícula o litiasis. Después de poco tiempo comencé a observar que el número de colecistectomías practicadas era cada vez más numeroso y en razón inversa naturalmente decrecían las colecistostomías. Esto era el resultado del perfeccionamiento de la técnica quirúrgica y, sobre todo, de la creencia que se tenía entonces de tratar a la vesícula infectada como se trata al apéndice, suprimiendo radicalmente el foco de infección, ya que ninguno de estos dos órganos es indispensable al funcionamiento fisiológico normal del organismo. El resultado lejano de la práctica casi rutinaria de la colecistectomía, ya que solamente en casos agudos se forzaba la indicación de la colecistostomía, no se hizo esperar y un gran número de enfermos a quienes se les había quitado la visícula biliar, comenzaron a ser readmitidos en los hospitales con los mismos síntomas y en muchos casos presentando cuadros mucho más serios que antes de la intervención.

Un hecho de tanta trascendencia como éste, que destruía completamente los conceptos que se tenían entonces, tanto patogénicos como terapéuticos, tenía forzosamente que llamar la atención y, como consecuencia, se abrió la era brillantísima de los estudios y descubrimientos fisiológicos y patogénicos sobre la vesícula biliar y canales biliares, que trajeron como consecuencia el conocimiento casi perfecto de la fisiología de estos órganos y un cambio casi radical en el concepto patogénico de sus infecciones. El tratamiento quirúrgico de estas infecciones naturalmente sufrió un nuevo cambio, pero ya firmemente basado en los conocimientos anteriores y el cual, hasta la fecha, ha subsistido y sufrido la prueba de varios años. De esta manera volvió a ser la colecistostomía mucho más frecuentemente practicada que la colecistectomía y así entró la cirugía del canal colédoco en la práctica del cirujano moderno. El objetivo perseguido con estas intervenciones se basa en el concepto de la propagación de la infección a los canales biliares y a los órganos cercanos, cuya infección puede mejorar y en muchos casos curar, así como su funcionamiento fisiológico, por medio del drenaje adecuado y prolongado largo tiempo, bajo condición en ciertos casos, de suprimir el obstáculo mecánico que se opone al libre curso biliar por sus vías fisiológicas normales.

Terminaré mi trabajo con la exposición sucinta de las intervenciones quirúrgicas actualmente empleadas en el tratamiento de las infecciones biliares y su secuela las litiasis de la vesícula y canales, especialmente del colédoco, sin entrar en detalles sobre las operaciones comunmente practicadas y cuya técnica se encuentra en cualquier libro de texto.

Estas operaciones son: Colecistostomía, Colecistectomía Coledocotomía, Anastomosis de la

vesícula (Colecistenostomía: y colédoco al duodeno, estómago o intestino, y finalmente las llamadas operaciones plásticas de los conductos biliares, tales como resección en mango, diferentes incisiones, etc., encaminadas a corregir algún defecto del canal que obstruya o dificulte el libre flujo biliar.

La incisión que nosotros practicamos para intervenir en la vesícula biliar es la llamada pararectal derecha y, si lo encontramos necesario, la ampliamos en su extremidad superior en forma de bayoneta con una incisión transversal paralela al reborde costal. Rara vez hemos tenido que usar la incisíon transversal únicamente, que puede tener ventajas y aplicación especial al intervenir sobre los canales biliares.

La posición conveniente del enfermo es invariablemente la de Mayo-Robson; es decir, con la extremidad toráxica inferior levantada y el bajo vientre en un plano inferior. Esta posición facilita la exposición de la cara inferior del hígado a la vez que tiende a rechazar el intestino hacia abajo, descombrando el campo operatorio.

Como detalles de técnica especial en las intervenciones sobre la vesícula biliar, únicamente haré hincapié en los siguientes: **Exposición** perfecta del campo operatorio; **Asepsia** absoluta, teniendo presente que se opera en órganos con cavidades y contenidos infectados la mayor parte de las veces. En la Colecistostomía vaciar la vesícula antes de cerrar la cavidad, para permitir su exploración y poder estar seguros de que no existen cálculos. El vaciamiento debe hacerse de preferencia por medio de succión mecánica y de no poder disponer de este aparato entonces deberá usarse un trocar de regular tamaño conectado a un tubo de goma que permite el vaciamiento sin peligro de contaminación del campo operatorio (Ochsner). El drenaje de la vesícula, una vez fijada ésta a la pared abdominal, debe asegurarse ampliamente por medio de una sonda o tubo grueso que permita la libre salida de la bilis, que muchas veces es sumamente espesa y difícil de drenar espontáneamente. Ochsner aconseja el drenaje por medio de gasa únicamente, que se retira después de 6 a 8 días y que según él tiene la ventaja de prevenir las hemorragias de la mucosa vesicular, así como asegurar un drenaje perfecto por capilaridad. De cualquier manera que se drene, las indicaciones esenciales que deben llenarse son; el buen funcionamiento y prolnogación suficiente del drenaje.

En la Colecistectomía, la técnica ideal es indudablemente la llamada retrógrada y solamente detalles o dificultades del caso pueden forzar al cirujano la directa o comenzando del fondo hacia la pelvisilla vesicular. Los puntos principales de esta intervención son: **resección** total de la vesícula sin dejar parte de la pelvisilla infectada que podría ser causa del fracaso terapéutico operatorio; **ligadura** del canal sístico suficientemente alejada del colédoco para no correr peligro de fistulizar este canal, por acodadura. Esta ligadura debe hacerse sin hacer tracción o estiramiento y viendo claramente el campo operatorio, principalmente el colédoco. De ser posible debe procurarse ligar separadamente la arteria y el canal cístico.

Esta operación, cuya indicación está actualmente restringida, debe terminarse siempre con un examen cuidadoso del colédoco y la colocación de un pequeño dren que hace las veces de válvula de seguridad. El drenaje se puede colocar siguiendo la técnica de Kehr, brillantemente expuesta por el Prof. Texier y que consiste en hacer un canal suturando uno a otro los colgajos peritoneales desprendidos de la visícuula biliar; en el interior de este canal se coloca el dren, que funciona perfectamente y estará idealmente aislado por peritoneo del resto de la cavidad peritoneal.

La gravedad de estas intervenciones es estimada en su mortalidad por el Prof. Pauchet como sigue: Colecistostomía o Colecistectomía por cálculos de la vesícula únicamente, sin icteria, mortalidad 0.5 p. 100. La mortalidad aumenta rápidamente en relación directa con lo antiguuo del padecimiento y las manifestaciones de insuficiencia hepática y renal, pudiendo elevarse hasta más de 50 p. 100.

Coledocotomía (Judd). El canal colédoco cuyo diámetro es más o menos uniforme en todo su trayecto, en su última porción sufre primeramente una dilatación ampular (Ampula de Vater), seguida de un angostamiento al vaciarse en el duodeno que forma la llamada papila de Vater. Su diámetro interno en la papila es de un promedio de 3 a 5 m. m. y en la ámpula de 1 c.m. Se comprende fácilmente que este dispositivo anatómico haga de

la porción terminal del colédoco un lugar especialmente favorable para que cálculos que han sido movilizados bien sea de la vesícula o de las vías biliares superiores, puedan estancarse y retenerse indefinidamente en esta porción terminal y constituir un factor de los más importantes en la etiología de las icterias por retención, así como nos da una idea clara sobre la conducta que el cirujano debe observar en todos los casos de litiasis biliar, es decir, que jamás debe descuidar el examen metódico y minucioso del canal colédoco en toda su extensión; pero principalmente en su porción terminal.

La sintomatología muy especial de esta complicación de la litiasis biliar, debe hacer sospechar de antemano al cirujano la existencia de uno o varios calculos en la porción terminal del colédoco y entonces, más que nunca, deberá hacer su examen con sumo cuidado, recurriendo sin vacilar a la abertura del colédoco seguida del paso de una sonda hasta el duodeno. Cuando existe algún cálculo retenido en la ámpula de Vater se podrá sentir fácilmente ya sea con la pura sonda o bien por deslizamiento hecho con los dedos contra de dicha sonda. En casos no raros de gran dilatación, este examen puede ser hecho introduciendo un udedo a través de una incisión suficientemente amplia.

Con relativa frecuencia se presentan casos en los que el diagnóstico de litiasis biliar ha sido absolutamente correcto y en los cuales se habián practicado una, dos o más intervenciones (Colecistostomía, Colecistectomía, etc.) pero al persistir todos o la mayor parte de los síntomas por los cuales buscaron el auxilio del cirujano, se vieron sometidos a una nueva intervención quirúrgica, observándose en la mayoría de los casos, la retención de uno o varios cálculos en la ámpula de Vater. 17.9 p. 100 de los casos operados por padecimiento biliar, han sido encontrados con cálculos en el colédoco (Judd). En autopsias verificadas en casos fallecidos a consecuencia de intervenciones en la vesícula biliar, se encontraron cálculos en el colédoco en una proporción de 61.3 p. 100 (Clute, Massachusetts Gral. Hospital). Wilkie encuentra cálculos en el colédoco en 18. p. 100 de los casos operados por litiasis vesicular. En general, se estima que en casos de colelitiasis hay 24% de probabilidades de encontrar cálculos en el colédoco.

Se desprende, pues, la importancia capital de la exploración cuidadosa del colédoco, para el enfermo, desde luego, y a priori para el prestigio del cirujano.

Técnica de la coledocotomía.—Posición del enfermo la de Mayo Robson. Es de suma importancia una buena exposición del campo operatorio, lo que se consigue con cualquier incisión suficientemente amplia, bien sea pararectal en bayoneta, transversal, etc.

Después de rechazar las asas intestinales por medio de compresas grandes y preferentemente húmedas, se colocan los separadores y se descrubre completamente el canal colédoco, que muchas veces hay que desprenderlo lo numerosas adherencias casi siempre blandas. Cualquier lugar del canal puede ser incindido teniendo cuidado que la abertura sea siempre suficientemente amplia para facilitar su exploración y sabiendo que aún cuando la incisión sea grande su reparación o sutura no presenta grandes dificultades, ni se expone tampoco a este conducto o estrechamientos cicatriciales. Cuando se puede sentir un cálculo a través de las paredes, basta inmovilizarlo con dos dedos de la mano izquierda y hacer la incisión encima de éste, agrandándola todo lo que sea necesario; cuando no es posible sentir ningún cálculo, se colocan dos pinzas intestinales de Allison que inmovilizan el canal y que facilitan grandemente la incisión. Una vez abierto, se seca cuidadosamente la bilis que escurre por la incisión y se procede a hacer el examen interior, por medio del dedo cuando la dilatación lo permita y si esto no es posible, por medio de una sonda metálica o sensillamente con una pinza curva sin dientes que casi siempre se consigue pasar hasta el duodeno. Una vez que se ha encontrado el cálculo, que como he dicho, generalmente está alojado en la ámpula de Vater, es cuestión relativamente sencilla extraerlo por medio de una cucharilla roma, aún cuando sin embargo puede presentarse algún caso que esta maniobra no dé resultado y que force al cirujano a abrir el duodeno y hacer la extracción del cálculo a través de la papila. En casos crónicos, en los que la cabeza del páncreas está inflamada y endurecida, es difícil sentir los cálculos alojados en la ámpula, y por ende, el cirujano no puede estar completamente se-

guro de haber hecho su extracción total; sin embargo, nunca se deben prolongar demasiado estas maniobras ya que el traumatismo, que sería la resultante, podrá ser de fatales consecuencias desarollando estrechamientos y favoreciendo la infección.

Depués de la extracción del cálculo, la maniobra más importante es el drenaje del canal, que se consigue perfectamente por medio del tubo en T de Deaver, cuyas dos pequeñas ramas pueden ser introducidas con facilidad en la luz del canal, con lo cual se mantendrá en posición; pero de juzgarse necesario, se podrá colocar un punto de seda en cada extremidad de la incisión. Las ventajas del drenaje por este medio son evidentes; no impide el paso de bilis hacia el duodeno cuando la inflamación del canal ha desaparecido o mejorado y cuando ésta subsista, se tiene segura la salida de la bilis al exterior; se puede inyectar por el tubo toda clase de líquidos incluso alimentos; la cicatrización del colédoco se verifica normalmente sobre las ramas del tubo sin tendencia a estrechamientos y la extracción del mismo no presenta ninguna dificultad.

La operación se termina con la sutura de la pared, dejando un pequeño dren en la cavidad abdominal.

Su mortalidad se estima en 6 a 7 p. 100 en casos normales. Puede subir hasta 50 p. 100 según Pauchet, en casos crónicos de larga duración en los que el funcionalismo del hígado y riñón está muy comprometido. Esta cifra parece algo exagerada de acuerdo con estadísticas americanas.

Existen además lo que pudieran llamarse operaciones plásticas en el canal colédoco y cuya técnica y aplicación requiere una habilidad y experiencia operatoria refinadas, pero que todo cirujano debe conocer y estar preparado para su aplicación, dado que no es posible saber de antemano el procedimiento quirúrgico que se verá obligado a realizar en un caso dado y debe tenerse presente siempre que lo inesperado puede presentarse.

Estas operaciones son: la resección en mango por estrechamiento anular, seguida de sutura punta a punta, de técnica especialmente difícil y que puede ser substituída con la sección longitudinal únicamente, seguida de la inserción y drenaje por el tubo en T. Cuando la porción resecada ha sido considerable y la aproximación de los dos cabos es imposible, se puede substituir esta porción por un segmento de tubo de hule que se sutura o simplemente se inserta a los dos cabos del colédoco. Esta intervención debe considerarse todavía como experimental y es criticada fuertemente por muchos cirujanos, quienes prefieren hacer el avocamiento del cabo central del canal directamente al duodeno. Ambas intervenciones son de técnica extremadamente delicada y difícil.

En general se puede decir con Deaver, que en la cirugía del canal colédoco más que en la de otro órgano cualquiera del cuerpo humano, se debe seguir con todo rigor uno de los principios fundamentales de la cirugía: 'ver claramente lo que se hace."

Pauchet estima la mortalidad de las intervenciones sobre el colédoco como sigue: Coledocotomía por cálculos sin icteria 0.50 p. 100; con icteria reciente sin crecimiento del hígado y miocardio normal 10 p. 100; con icteria pronunciada, hígado grande, pulso rápido y orina escasa 50 p. 100. La mortalidad en las operaciones plásticas es sensiblemente mayor que en las coledocotomías.

Estas cifras son demasiado elocuentes y ponen de manifiesto la necesidad evidente de la intervención oportuna.

Respecto a las anastomosis de la vesícula biliar o colecistoneostomías, se pueden verificar con el estómago, duodeno, yeyuno y colon transverso. Su técnica en general es la misma que para las anastomosis intestinales y gástricas, bien sea por medio del botón de Murphy o suturas, aú cuando las dificultades técnicas son mucho más considerables, principalmente cuando la anastomosis se hace con el duodeno, que sería la intervención que más se pudiera semejar, por su resultado, al estado fisiológico normal. La necesidad en este caso, de movilizar por desprendimiento el duodeno, para poder avocarlo al fondo de la vesícula, hace que esta intervención sea muy peligrosa; tanto por la frecuencia de las hemorragias, como por el gran traumatismo a que se someten estos órganos, facilitando así el aumento del shock operatorio y la posibilidad de infección del peritoneo mortificado.

Estas intervenciones se prectican rara vez y la mayor parte de los casos traduce un fracaso operatorio anterior. Su indicación única actualmente es el cáncer de la cabeza del páncreas o

del canal colédoco. Su mortalidad muy elevada, está en relación estrecha con el estadc general del paciente y la habilidad y experiencia del operador. Puede pasar de 50 p. 100.

Un punto de capital importancia en la cirugía biliar, para la resolución del cual el cirujano debe desplegar toda su experiencia y juicio clínico, así como un conocimiento perfecto del enfermo en lo que se refiere al estado funcional del hígado, páncreas, riñones y miocardio, es la selección del anestésico que debe ser usado.

Todos los anestésicos por inhalación son más o menos tóxicos, para el hígado principalmente y después para los riñones y corazón, volviéndose más peligrosos todavía, cuando se trata de casos crónicos en los cuales estos órganos, los más nobles quizás de la economía, han estado sometidos durante largo tiempo a la acción de toxinas, producto de la infección e inflamación crónicas, que han comprometido en muchos casos de una manera permanente, la función de estos órganos, provocando en la intimidad de sus parenquimas, cambios histológicos definitivos.

Se impone, pues, la necesidad de escoger sabiamente el anestésico que pueda causar el menor perjuicio a estos órganos ya comprometidos y que tenga las mayores probabilidades de no volver más grave todavía la intervención quirúrgica indicada.

Por razones obvias, el cloroformo debe ser descartado en todos los casos.

El éter, que es en general el más usado, combinado en muchos casos al Proto-óxido de Azoe, debe ser usado con precauciones, procurando administrar la dosis ínfirma; la aplicación preoperatoria de dosis regulares de morfina y atropina, disminuyen notablemente el consumo de anestésico. Sin embargo, hay que tener presente que también el éter es tóxico, especialmente contra el hígado y que no se debe usar sino en casos en que no se disponga de otro anestésico mejor o que la urgencia de la intervención—force al cirujano a echar mano de cualquier recurso disponible en un momento dado. Dos son los accidentes o complicaciones que directamente se pueden inculpar a la anestesia por el éter, tratándose especialmente de las intervenciones biliares: La dilatación aguda del estómago, posiblemente la más frecuente, que con su aparición y síntomas de tragedia, hacen temer al cirujano un desenlace funesto; pero que afortunadamente, aún cuando grave, son relativamente pocos los enfermos que mueren como consecuencia directa de su aparición, a condición que se haga su diagnóstico inmediato y correcto, no confudiendo sus síntomas con los de peritonitis aguda. La otra complicación atribuible al éter es: la insuficiencia aguda del hígado, proceso patológico complejo y polifacético, necesariamente mortal.

La anestesia que se debe preferir en la cirujía biliar es indiscutiblemente, la local a la Novocaína, combinada con el Proto-óxido Nitrozo, en los tiempos operatorios que requieren un silencio abdominal perfecto. Tengo la convicción firme que si no se usara en general otro método de anestesia, la mortalidad en estos casos bajaría sensiblemente, y la cirugía biliar recobraría el prestigio que le corresponde, no inculpando al acto operatorio los fracasos de la anestesia.

En nuestra experiencia de los últimos años, hemos usado con gran éxito quirúrgico, la Abertina (Tribromo-etanol) como anestésico basal, combinado con pequeñisimas cantidades de éter y algunas veces con el Amital Sódico. En casos biliares bien seleccionados, es decir relativamente recientes y en los que la función hepática se conserva normal o casi normal, el uso de este anestésico es verdaderamente recomendable por todos conceptos. En intervenciones que duren hasta una hora, la cantidad de éter administrada apenas si llega a 15 ó 20 gr. y en algunos casos es mucho menor.

En más de 400 casos de toda naturaleza, en que hemos usado la Abertina, no he observado ninguna complicación grave atribuible directa o indirectamente al anestésico. Sus ventajas son numerosas: acción prolongada, haciendo posibles las intervenciones más dilatadas; marcha postoperatoria casi perfecta, faltando principalmente los fenómenos de irritación gástrica y hasta cierto punto los de parálisis intestinal; el descenso de la presión arterial es poco marcado y en muchos casos nulo; ausencia de complicaciones pulmonares, etc.

Por último es de recomendarse como una ayuda eficiente en la cirugía hepato-biliar, la aplicación de un foco termógeno constante sobre el hígado, usándose al efecto principalmente, un aparato de diatermia, que mantenga el calor constante alrededor de 40 ó 41 grados.

Por este medio se logra disminuir notablemente el shock operatorio y a la vez se facilita la conservación normal del complejo funcional hepático.

CONCLUSIONES

1. Siendo las infecciones biliares un padecimiento sumamente común en México, es urgente una mayor cooperación y un mejor entendimiento entre el Internista y el Cirujano, procurando cada cual deslindar con precisión su campo de acción, utilizando todos los medios que la Ciencia Médica pone actualmente a su alcance, para hacer el diagnóstico preciso y precoz del padecimiento; único medio de evitar o disminuir complicaciones graves, muchas veces incurables y mortales.

2. La cirugía precoz de la vesícula biliar es, probablemente, el único medio terapéutico capaz de curar definitivamente estos padecimientos y evitar la propagación de la infección hacia los canales biliares, hígado y páncreas.

3. La Colecistectomía se debe practicar únicamente, en casos recientes de infección o de litiasis, y tan pronto como se tenga la convicción del fracaso del tratamiento médico, no dando tiempo, por consiguiente, a que la infección se propague.

4.. En los casos crónicos el drenaje quirúrgico es el precisamente indicado.

5. La gravedad de las intervenciones quirúrgicas aumenta rápidamente con la antigüedad del padecimiento.

6. Es de capital importancia escoger un anestésico adecuado, debiendo conocer el cirujano el estado funcional del hígado, páncreas, riñones y miocardio.

CONCERNING THE SURGICAL TREATMENT OF THE INFLAMMATORY LESIONS OF THE BILIARY TRACT.

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(Translation by Editor.)

In considering the achievements of biliary surgery during the past fifteen years, and the developments in the physiology and pathology of the biliary tract, there are two facts of special interest. The first of these, of particular importance to us, may be stated in question form: Although we have favorable climatic, alimentary and hygienic conditions for the development of biliary infections and their sequelae, and although we do actually have them more frequently than the northern races, why do we treat so few cases surgically? The second fact has been the acceptance, abandonment, and re-acceptance of surgery as the proper method of treating biliary infection and its sequelae,—inflammation and calculi of gallbladder and bile ducts. This paper will be devoted chiefly to a discussion of these two points, closing with a brief description of surgical technic.

There is little doubt that biliary infection is more frequent in our country than in those further north. This is partly due to the greater prevalence of intestinal infections as you approach the tropics, but more especially to the general unhygienic conditions in Mexico, especially those associated with food and drinking water, which are so important in the etiology of biliary infection. The statements herein are based on personal observation, as I am, unfortunately, unable to offer statistical support. In lieu of local statistics, I will present some gathered from American and European authors, which will testify to the frequency of these lesions, and it is with real surprise that I have learned that these figures are even higher than among us. Graham and his collaborators say that from 20 to 25 per cent of adults have biliary calculi, and an equal percentage suffer from biliary infection without calculi, and that lithiasis is more frequent in men than in women in the proportion of two to five. Mentzer of the Mayo Clinic states that 21.67 per cent of adults have biliary calculi. Hansen's figures are 24.7 per cent. McGregor of New York gives the percentage as 32.5. On 1000 autopsies in Vienna, 32.5 per cent were found to have calculi, with 59.6 per cent showing cholecystitis and in 41.3 per cent there was pathology in the biliary canals. Riesman found calculi in 25 per cent of his autopsies.

With biliary lesions so extremely frequent, why are they not treated surgically by us, as they should be? There are various reasons for our failure to apply the accepted surgical principles which have developed out of the experience of the past twenty years. One of the chief difficulties is that of correct diagnosis, both internists and surgeons being too little familiar with the symptoms. These usually occur in the form of reflexes to various organs, especially stomach and duodenum, suggesting ulcer or one of the common disturbances called dyspepsias. Dr. Smithies, of Chicago, one of my teachers, affirmed many years ago that 75 to 80 per cent of the cases diagnosed ulcer of stomach or duodenum and referred to him as a medical consultant he found to be suffering from biliary inflammatory lesions with reflex symptoms referred to neighboring organs. The natural consequence of the difficulty in interpreting symptoms of biliary

inflammation must be erroneous diagnosis and inefficient treatment. These patients are soon classed as chronic dyspeptics condemned to polypharmacy which relieves the symptoms without attacking the cause, until vital organs such as liver and pancreas are invaded and it is then too late to give efficient relief. Numerous cases have been taken to the operating table for ulcer and found to have biliary lithiasis, a simple cholecystitis with inflammation extending into the ducts, or adhesions to stomach or duodenum from chronic biliary lesions.

Why are errors in diagnosis and errors in treatment of such tremendous importance in infections of the biliary tract? This will become evident from a study of the progress of the infectious process in cholecystitis. The anatomico-physiological conditions in the gallbladder make it an excellent receptacle for infection, and although denied by many, this infection can ascend from the duodenum by way of the common duct directly against the current. The infecting organisms can leave the vesicle and traverse the portal system, passing directly to the intestine from whence they are absorbed into the portal circulation, carried to the liver, eliminated into the bile, reaching and re-infecting the gallbladder, or being taken up by the numerous lymphatics of the biliary canals. When we consider this constantly repeated cycle of contamination and infection, we must see that the eradication of this process is almost impossible with the therapeutic measures at our disposal. As the inflammatory cycle continues, the gallbladder wall becomes thickened, its infected contents are evacuated irregularly into the common duct, extending further and further into the biliary canals which, in due time, show the results of this infection. Depending somewhat on the relations between the canals and neighboring organs, the pancreas is first involved, then the liver and finally the periduodenal tissues, resulting in adhesions which affect the function of duodenum and stomach. W. Mayo thinks that pancreatitis is found in 7 per cent of gallstones and in 27 per cent of common duct stones.

When the infection has become widespread in this manner, how can we expect to cure it by medical means, or even by simple extirpation of the gallbladder which was the origin of the trouble but is now no more than an area of localization in a widespread process? Both reason and experience have shown that it is impossible. Extensive studies in the pathology of biliary infections have shown us wherein are the faults of medical and surgical treatment, and what should be the correct procedures. The internist who is too little familiar with the process of biliary inflammation, will frequently persist for years in medical treatment which may give the impression of temporary improvement, but he will finally be convinced that the patient is not receiving permanent benefit but is progressing unfavorably. The surgeon is then called and, frequently showing the same ignorance, will do a simple cholecystectomy, as if for calculus or gallbladder infection, and this also does not result in curing the patient. The internist has used poor judgment in postponing the surgery which alone could have cured the disease, and the surgeon uses just as poor judgment in adopting any course short of complete surgical cure. Then the internist accuses the surgeon of breaking down the clinical progress of the case and the surgeon accuses the internist of delaying too long. The result of this mutual recrimination is to distract attention from the clinical concepts and to delay the establishment of proper rules for treating biliary infections.

The proper procedure on the part of the internist is to give a reasonable time under medical treatment and then if marked improvement is not obtained, to seek surgical aid without further delay as the only certain method of obtaining cure and preventing serious extension of infection to biliary ducts, pancreas and liver. The surgeon, if the case is in an advanced stage when referred to him, should be aware of the complexity of the involvement and adopt those measures which modern surgery has made available. He should not expect to cure the patient by a simple brilliantly executed cholecystectomy, but must realize the importance of prolonged biliary drainage, either directly through the gallbladder by cholecystostomy, or by means of a choledochotomy, after previous removal of the vesicle and a minute examination of the common duct throughout its entire course.

Although we know that biliary lithiasis can exist in many cases without symptoms, both internists and surgeons agree on their pathological and clinical significance. Absence of symptoms should not prevent the adoption of decisive surgical measures as soon as such a diagnosis is made; the demonstrated relation between lithiasis and cancer, the undeniable fact that calculi from chronic infection and the ever present danger of sudden acute exacerbations, make the indications for surgical treatment clear. Pauchet, with his usual clarity, points out that those who contend for delaying surgery in biliary lithiasis until symptoms occur are proposing an eventual operation with a high mortality instead of a safe operation with a mortality of one-half of one per cent.

To my mind the reasons why modern surgery has not made greater headway in the treatment of inflammatory biliary lesions are: (1) The difficulties in diagnosis by inadequately prepared practitioners; (2) the therapeutic errors of both internists and surgeons, errors so lamentable that we can safely say that in the entire field of medicine, there is no theme more important than this.

It is well for us to bear in mind the evolution of the surgical procedures in inflammatory biliary diseases, in direct and logical relation to the new conceptions of their pathology. During my interneship at the Augustana Hospital, from 1917 to 1922, I was able to observe what might be called the dawn of biliary surgery. Prior to that time, during medical studies and especially during four years interneship in the Hospital Civil de Guadalajara up to 1916, the surgery of the biliary tract was an un-

known field and I had never observed such an operation. Imagine my interest and surprise on beginning my surgical interneship in 1917, under Professor Ochsner, to learn that surgery of the biliary tract was not only possible but was one of the most frequent operations performed in a general hospital. At that time, the usual operation was cholecystostomy, and very rarely was extirpation of the gallbladder done The diagnosis was usually infected gall-bladder or lithiasis. As time passed, it was observed that cholecystectomies were increasing in number and cholecystostomies correspondingly decreasing. This was the result of constantly improved surgical technic and the conception that the infected gallbladder should be treated on the same basis as an infected appendix, by radical removal of the focus of infection and also on the assumption that neither of these organs was essential to a normally functioning organism. In this manner, cholecystectomy became the routine procedure, and only in such acute cases as made it necessary, was cholecystostomy done, especially when a great number of patients in whom the gallbladder had not been removed began to return with the same symptoms and in more serious condition than before operation.

The next stage was brought about by the brilliant era of studies in the physiology and pathology of the gallbladder and biliary tract, which entirely upset the existing ideas of therapeutics by bringing a more perfect knowledge of the functions of these organs and a better conception of the pathogenic changes in the infections involving them. Surgical ideas underwent another change, based on these newer concepts, so that cholecystostomy came again to be more frequently practiced than cholecystectomy, and the surgery of the common duct was taken up by the modern surgeon. The chief object sought by the operative procedures came to be based on a conception of the spread of infection to the biliary canals and neighboring organs, which infection could be improved and often cured with restoration of normal function, by means of adequate and prolonged drainage.

With this statement of general principles, I wish to outline briefly the surgical procedures actually employed in biliary infection and its sequelae,—lithiasis of the gallbladder and ducts, especially the common duct, without attempting detailed descriptions as these can be found in any textbook on surgery.

The operations employed are (1) cholecystostomy; (2) cholecystectomy; (3) choledochotomy; (4) cholecystenterostomy (anastomosis of the gallbladder or duct to stomach, small intestine or colon; (5) so-called plastic operations on the ducts, such as resections, various incisions to correct defects or obstructions to flow of bile

The incision we use is the right pararectus, which is enlarged, if necessary, by a bayonet extension along the right costal margin. At rare intervals, we use a single transverse incision which has some advantages in work on the ducts. We have found the Mayo-Robson position the best for the patient,—with lower thorax elevated. This helps in exposing the under surface of liver and when retching occurs helps to keep the intestines out of the operative field. The special point in technic is: absolute asepsis, bearing in mind that we are dealing with organs which have cavities containing infected material.

In cholecystostomy, empty the bladder before opening it, in order to facilitate exploration for calculi. Evacuation is preferably done by mechanical suction, and if no apparatus especially designed for this is available, it can be done with a trocar connected to a rubber tube, without contaminating the operative field (Ochsner). Drainage of the bladder through the abdominal wall should be assured by a catheter or tube large enough to permit free passage of the bile which is often thick. Ochsner advised drainage by means of gauze which he removed after six or eight days and which is said to have the advantage of preventing hemorrhage from the bladder mucosa and of promoting capillary drainage. By whatever manner drainage is secured, the essential indications are that it shall function well and be sufficiently prolonged.

In cholecystectomy, the best technic is the so-called retrograde, starting at the fundus and working toward the pedicle. The principal technical points are: total resection of the infected tissues; ligation of the cystic duct far enough from the common duct to avoid fistula into that canal; this ligature should be without traction or stretching and out of the operative field; if possible there should be separate ligatures for the artery and the cystic duct. The indications for cholecystectomy are limited, and the operation should always include a careful examination of the common duct and the employment of a small drain as a safety valve. This drain should be used according to the technic of Kehr, as explained by Prof. Texier, by constructing a canal from the peritoneum of the gallbladder; in the interior of this canal the drain is placed, where it will function perfectly and be isolated from the remainder of the peritoneal cavity.

Choledochotomy (Judd): The common duct has an almost uniform size throughout, with an ampullar dilatation near the distal end, followed by a narrowing where it empties into the duodenum in the so-called papilla of Vater. The diameter in the ampulla is about three to five centimeters and in the papilla about one centimeter. It is easy, therefore, to understand how calculi which have formed in the upper biliary tract, can be retained indefinitely in this terminal portion and cause obstructive jaundice; also why the surgeon should always carefully examine the whole common duct and especially the distal portion. Whenever the symptoms are such as to suggest calculi in the terminal portion of the common duct, great care should be taken to examine its distal opening, including the passage of a sound into the duodenum; if there is great

dilatation of the duct, it can be explored by the finger through a suitable opening.

Many cases have been observed in which one or more operations have been performed but the symptoms persisted, and stones were found retained in the ampulla. Out of the cases operated upon by Judd for biliary pathology, 17.9 per cent had stones in the common duct. Clute, of the Massachusetts General Hospital, reports that of patients dying following biliary surgery, autopsies showed common duct stones in 61.3 per cent. Wilkie found calculi in the common duct in 18 per cent of cases operated for cholelithiasis. In general, it is estimated that calculi will be found in the common duct in 24 per cent of all cases of cholelithiasis, so that the great importance of exploration of the duct is quite apparent.

Technic of Choledochotomy. Use the Mayo-Robson position. Use the incision which will give the best exposure. After the intestines are walled off by wet compresses, the whole common duct is then exposed, it being frequently covered by adhesions, usually soft. The incision should be enlarged, if necessary, to facilitate exploration, because however large the incision may be it can always be closed without danger of adhesions. When a calculus can be felt through the duct wall, hold it between two fingers of the left hand and make an incision over it, enlarging this as may be necessary. When calculus cannot be felt, immobilize the canal with two Allison forceps, incising between them. Carefully wipe away any bile that escapes, and then examine the interior of the canal with the finger if the lumen is large enough; if not, by means of a sound or curved forceps without teeth, which must always be passed through into the duodenum. When calculus is found it is generally in the ampulla of Vater, and it is a relatively simple matter to extract it with a blunt spoon. When this maneuver is not successful, the surgeon must needs open the duodenum and remove the calculus through the papilla. In chronic cases in which the head of pancreas is inflamed and indurated, it is difficult to feel a calculus in the ampulla, and the surgeon may not then be able to feel certain of a complete extraction. However, he should not unduly prolong the operation nor do too much traumatism by breaking down adhesions, thus inviting a fatal infection.

After removal of the calculus the most important thing is the drainage of the canal, which can best be done by the T tube of Deaver, whose two small arms will maintain it in position in the canal; if deemed advisable, two strands of silk may be placed in each end of the incision. The reasons for this drainage are obvious, because if inflammation in the duct subsides passage of bile to the duodenum will not be impeded; but if this does not subside drainage of bile to the exterior will be provided for. Furthermore, one can inject through the tube all kinds of fluids and liquid foods. The healing of the duct over the arms of the tube usually occurs without adhesions and its removal is not difficult. The operation is completed by suturing the abdominal wall leaving a small drain into the abdominal cavity. The mortality of this procedure is estimated at 6 to 7 per cent in average cases. It rises to 50 per cent, according to Pauchet, in chronic cases of long duration in which the functions of liver and kidneys are greatly impaired. This figure appears large in comparison with American statistics.

There are also the so-called plastic operations on the duct which every surgeon should be acquainted with as he might have to use them in emergencies, although they usually require more than usual skill and a refined operative technic. Among these procedures is the sleeve resection for annular constriction, the technic of which is very difficult, and for which can be substituted the simple longitudinal resection followed by drainage with the T tube. When the resection has been considerable and the approximation of the extremities is impossible, a segment of tubing can be inserted and sutured in place, or simply inserted in the two ends of the common duct. This method is strongly condemned by many surgeons, who prefer to anastomose the end of the duct directly to the duodenum. In general, we would say with Deaver that in surgery of the common duct, as in surgery in any part of the body, we should observe closely one of the fundamental principles of surgery—"See clearly that which you are doing." Pauchet estimates the mortality in common duct operations as follows: Choledochotomy for calculus without icterus, one-half of one per cent; with recent icterus but without liver enlargement and with myocardium normal, 10 per cent; with pronounced icterus, enlarged liver, rapid pulse and scanty urine, 50 per cent. The mortality in the plastic operations is definitely larger than in choledochotomy. These figures are eloquent and emphasize the necessity for early intervention.

Cholecystenterostomy: Anastomosis of the gallbladder to stomach, duodenum, jejunum or transverse colon. The technic in general is similar to that for anastomosis of stomach and intestines—with Murphy button or sutures—except that the technical difficulties are greater, especially when the anastomosis is to the duodenum, than they would be when the surgical procedure leaves conditions more nearly physiological. The necessity of mobilizing the duodenum in order to carry it over to the fundus of the gallbladder makes this procedure very dangerous, both from hemorrhage and from the great amount of trauma which is required, these augmenting the operative shock and increasing the possibility of fatal infection of the peritoneum

These plastic procedures are rarely necessary and are usually applicable only to cases suffering from previous operative disasters. The only actual indication is cancer of the head of the pancreas or cancer of the common duct. The mortality is very high and in direct ratio to the general condition of the patient and the skill and experience of the surgeon. It is above 50 per cent.

ANESTHESIA

The selection of the anesthetic is of supreme im-

portance in biliary surgery. To the proper solution of this question the surgeon should bring all his experience and clinical judgment, as well as an intimate knowledge of the patient, especially the functional condition of the liver, pancreas, kidneys and myocardium.

All the inhalation anesthetics are more or less toxic especially to the liver, but also to the kidneys and heart. They are more dangerous in chronic cases where these vital organs have suffered toxemia over a long period, in many cases with definite parenchymatous changes. It is essential to select an anesthetic which will cause the least injury to these already damaged organs, and the least likely to increase the danger of the proposed surgical procedure.

For well known reasons, chloroform should not be used.

Ether is quite generally employed, often combined with nitrous oxide, but it should be used with caution and in minimum quantity. The preoperative use of morphine and atropine definitely diminishes the quantity of anesthetic required. There is no doubt that ether is toxic, especially to the liver, and it should not be used except in cases where no other anesthetic is available, and where the urgency of the case forces its employment. Two accidents or complications are directly attributable to the use of ether anesthesia, with special reference to biliary surgery. Acute dilatation of the stomach occurs frequently but fortunately is not fatal; it calls for an immediate and correct diagnosis so as not to confound the symptoms with those of acute peritonitis. The other complication attributable to ether is acute liver insufficiency, a complex pathological process which results fatally.

The anesthetic which is preferable in biliary surgery is undoubtedly local (novocaine), combined with nitrous oxide in those cases which require a quiescent abdomen. I have the conviction that if we would not use any other method, our mortality in these cases would be definitely decreased, and biliary surgery would recover a prestige which has been lost because of fatalities resulting from anesthesia.

In recent years, we have used avertin with great success as a basic anesthetic, combined with the smallest possible dose of ether and, at times, with sodium amytal. In well selected cases of relatively recent development, in which the liver function is normal or nearly normal, the use of this anesthetic is highly recommended. In operations lasting more than an hour, when ether may be required, the quantity given is usually not more than 15 to 20 grams, and often less. In more than 400 cases of all kinds in which we have used avertin we have seen no grave complication attributable, either directly or indirectly, to the anesthetic. It has numerous advantages: prolonged action; greater relaxation of operative incision; postoperative course nearly perfect, without gastric irritation or intestinal paralysis; fall in blood pressure absent or slight; pulmonary complications absent.

Finally, as an efficient aid in surgery of the liver and bile tract, the application of heat over the liver is recommended, preferably by diathermy, maintaining a constant temperature of 40 to 41 degrees. This diminishes the operative shock and helps to conserve the functional capacity of the liver.

CONCLUSIONS

1. Biliary infections are common in Mexico and their proper management requires the close cooperation of internist and surgeon, since this field demands every resource that scientific medicine has to offer, in order to make a precise diagnosis and to prevent or diminish grave complications which many times are incurable and fatal.
2. Correctly applied surgery is probably the only effective method of curing these ailments and stopping the spread of the infection to bile ducts, liver and pancreas.
3. Cholecystectomy should be used only in recent cases of infection or in lithiasis. It should be used promptly as soon as it becomes evident that medical treatment has failed, without giving time for the infection to spread.
4. In chronic cases, surgical drainage is the method of choice.
5. The gravity of the surgical intervention increases rapidly in direct ratio to the age of the pathology.
6. It is of the greatest importance to select the proper anesthetic and for the surgeon to have accurate knowledge of the functional condition of liver, pancreas, kidneys and myocardium.

TETANY FROM HYSTERICAL HYPERPNEA.

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A surprisingly large number of so-called emergency night calls are to attend young women who are having fits of hysterics. Usually the patient is surrounded by frantic relatives and sympathetic friends who are doing all they can to excite her more.

The object of this report is not a discussion of the neurotic instability which is found in people subject to hysterical attacks, but to point out the pathological physiology involved, and to suggest a method of treatment which has proved highly effective in my experience.

The following case report is chosen because the patient was a rather phlegmatic individual to outward appearance, and the case was divested of practically all the neurotic symptoms complicating the average case.

Male, age 23, married; occupation, student nurse.

Complaint: For the last five or six nights has awakened with a sensation of extreme shortness of breath. He insisted that he had to be carried out doors to breathe. Nurses reported that he presented a sort of tetanic convulsion, the pulse ceased, he lost consciousness, and his condition appeared alarming By the time a doctor had arrived the attack had passed and the patient appeared quite calm.

His past history was uninteresting except that he had been told by two or three doctors that he had a mitral murmur. However, he had been working for the past two or three years at unusually hard physical labor without the slightest symptom of palpitation, shortness of breath, or swelling of the ankles.

Physical examination immediately after the attack showed the blood pressure to be 130 systolic, diastolic questionable; there was a moderately loud systolic murmur. The apex beat was inside nipple line. Pulse below 100. Respiration of modified Cheyne-Stokes type.

After having my rest disturbed several times I felt fortunate when he said, one night, "I feel another attack coming on." Thereupon in less than a minute a severe hyperpnea ensued. The skeletal muscles became tense and the hands assumed the typical position seen in tetany, being fixed at the wrists and metacarpophalangeal joints with the phalangeal joints extended. The extremities became cold and it was impossible to locate the pulse due to muscular rigidity, but the heart sounds at the apex were increased in strength and slowed in rate. The face became strikingly distorted and the patient seemed unable to talk. The diagnosis became apparent. He was instructed to hold his breath and in about thirty seconds there followed a relaxation of the muscles and a return to normal except for occasional periods when there was some shortness of breath.

Laboratory Findings: Urine taken immediately after the attack was strongly alkaline. Ammonia-urea ratio showed ammonia decreased to about one-half normal. Sugar and albumin were negative. Alkali reserve by Van Slyke method, taken six hours later, showed 32 cc. carbon dioxide per 100 cc of blood.

CASE No. 2. A young woman was admitted to the hospital suffering from repeated convulsions. She had been in a slight automobile accident a few hours before in which no one had been hurt. She would precipitate the attack by crying, swinging her arms, and clutching her chest. Thereupon apparent dyspnea would ensue with tetanic spasm of all skeletal muscles. She would apparently lose consciousness and breathing would stop. Muscles would relax, consciousness would return, but spontaneous breathing would not return until cyanosis had developed. After a period of modified Cheyne-Stokes' respiration and sighing, breathing would assume a normal character until the patient began to think about the accident again. After one or two partially successful attempts on the patient's part, she was able to dominate the shortness of breath and no further attacks ensued. No laboratory work was done as the patient was discharged, walking four hours after her admission.

The consideration of the pathological physiology in these cases takes us back to the various mechanisms involved in maintaining the hydrogen ion concentration of the body at its constant level.. The so-called buffer substances are weak acids, such as carbonic and acid sodium phosphate, and weak bases such as sodium bicarbonate and sodium dibasic phosphate in the blood and body fluids which help physically to prevent fluctuations in Ph value. Van Slyke[1] and Henderson[2] point out that the molecular concentration of carbonic acid and sodium bicarbonate in the blood is in the ratio of one to twenty, for practical purposes in estimations of acid base balance in the blood, other substances can be disregarded. The hydrogen ion concentration in the blood is then directly proportionate to this ratio. Since the hydrogen ion concentration (OH) in such a solution as the blood is very low, in the region of 3.5 times 10^{-8}, or 0.000,000,000,035 N solution of acid, (corresponding to Ph 7.45), the ratio could fluctuate considerably and still leave the blood **very** weakly acid or alkaline.

The body constantly strives to maintain this ratio at a very constant level. Since the hydrogen ion is the true respiratory stimulant, respiration is the first mechanism to be brought into play in any change in the acid base balance. For example, exercise increases carbonic acid in the blood, raising the carbonic acid-bicarbonate ratio and in turn the OH. Respiration increases and lowers the alveolar carbon dioxide tension which, in turn, lowers the carbonic acid in the blood to its normal level. Fixed acids as diacetic or hydrochloric, may deplete the alkali reserve thereby changing the ratio possibly to 1/10 instead of 1/20. Due to increased OH, respiration would be quickened sufficiently to lower and maintain the carbonic acid at a point lower than normal but keeping the ratio in the vicinity of 1/20. At the same time the kidneys would be eliminating as many acid radicals as possible combined with ammonia and acid salts, chief of which is acid sodium phosphate. Thus we find clinically that a condition of acidosis is usually shown by a decreased alkali reserve,

determined by Van Slyke method. Strictly speaking, however, an acidosis is an increased OH (hydrogen ion concentration) which may be found with a normal or even increased alkali reserve. A normal alkali reserve is assumed when 50 to 60 cc. of carbon dioxide by the addition of a strong acid (Van Slyke's method) can be extracted under vacuum from 100 cc. of blood.

In the case of tetany we find the opposite condition prevailing. There is true alkalosis or decreased OH. Ordinarily this is thought of as being due to an excess alkali in the blood; but as has been shown relative to acidosis, the determining factor is the ratio between carbonic acid and sodium bicarbonate molecules that determines the increase or decrease of OH and not the actual amount of either one taken independently. So in the case of alkalosis it may be present when the alkali reserve is normal or even markedly below normal.

Hyperventilation of the lungs may be induced voluntarily by crying, screaming or severe emotion. Also apparently at times certain visceral sensations, as giddiness for example, are misinterpreted as shortness of breath with resultant hyperpnea. Hyperventilation causes an actual decrease in carbonic acid in blood and a relative sodium bicarbonate increase, thereby decreasing the OH and resulting in actual alkalosis. In its effort to reestablish the equilibrium the kidney eliminates the ammonia not being needed to carry away acid radicals. After compensation has been accomplished the alkali reserve is low as in diabetic acidosis, but for another reason.

It becomes apparent that once the alkali reserve has been thus reduced, a repetition of the tetanic convulsion can be brought on with a comparatively shorter period of hyperventilation than necessary in an individual with a normal alkali reserve. That is, when the buffer substances are depleted the body is less able to compensate for changes induced by either addition or substraction of acid radicals.

Examples of mild alkalosis from hyperventilation are common. Often patients complain of dizziness during a chest examination and muscle fibrillation may at times be heard with the stethoscope. It may frighten the neurotic patient. The trained gas anesthetist will recognize symptoms of alkalosis at times from hyperventilation stimulated by oxygen lack.

If hysterical hyperpnea continues until unconsciousness intervenes there is a compensating apnea and the carbonic acid may have been so depleted that it does not accumulate with sufficient rapidity to stimulate respiration before oxygen lack demands a breath. This satisfied, there is another period of apnea, not so long, and so on until compensation has been accomplished.

Treatment in the case of the young man was limited to a simple explanation of his condition with instructions to hold his breath the next time he felt one of those "queer sensations of shortness of breath." Three years later he stated that he had never had another attack of tetany although he had at times felt giddy and short of breath; but that upon holding his breath it would be relieved.

While tetany from hyperventilation is by no means the whole story in hysteria, yet when this phase of the condition is taken care of, it is found frequently, possibly due to restored self respect and confidence, that the patient is able to dominate the neurotic symptoms to a gratifying degree.

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FRACTURES
(Especially of the Long Bones.)

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I am not here to tell you how smart I am, nor to present a series of marvelous results obtained in fracture cases I have treated, but rather to endeavor to stimulate a greater interest and zeal in the careful and proper handling of those fractures of the long bones which are most frequently met with.

In order to treat a fracture of a bone intelligently, we must know something of the structure of bone, and also something of the healing process in fractures; so, while it may seem elementary, I feel we should briefly review our anatomy.

A long bone consists of a shaft or diaphysis, and two extremities or epiphyses. The shaft is tubular, the central cavity or medullary canal of which is filled with yellow marrow, and the shaft itself is composed of dense or compact bone covered with periosteum which carries the blood vessels to nourish the bone. These blood vessels enter through Volkmann's canals, which form the Haversian system, and ultimately reach the marrow itself. The wall of the tubular shaft is quite thick at its middle, becoming thinner as it nears the epiphyses. The epiphyses are composed of cancellous or spongy bone, surrounded by a layer of compact bone. In the interstices of the spongy bone is found the red marrow. Long bones are usually curved in two planes to afford greater strength and their epiphyses are generally expanded for purposes of articulation and attachment of muscles and tendons. Bone is a highly specialized form of connective tissue; in fact, it is calcified white fibrous tissue, modified structurally, until it becomes osseous tissue.

Now that we have a fairly good mental picture of what a bone is, let us talk about the healing process of bone. The repair of a fractured bone is similar to that of damage to the soft tissues. The essential elements for osseous repair are the **periosteum** and **cortical bone,** as the osteoblasts or new bone cells are formed from them. There is usually a separation of the edges of the fragments of a fractured bone, and the periosteum is torn or separated from the compact bone; however, a portion of it generally remains attached, to form the all important **periosteal bridge.** The soft parts are damaged and more or less localized hemorrhage occurs. As repair begins, this hemorrhage is absorbed and replaced by connective tissue cells in the form of a plastic exudate, which unites with the **osteoblasts** from the **periosteum** and **cortical bone** to form the temporary provisional callus. At the same time, the medulla or central part of the bone helps matters materially by plugging the canal of the bone and forming what we might consider as an intra-medullary splint. This soft callus hardens and is replaced by actual bone in from twelve to sixteen days, the ossification being due to cells from the periosteum and cortical bone. The mass is covered by an "ensheathing callus" and has the appearance of a plumber's wiped joint. By a process of condensation and rarefaction, this "permanent callus" is reduced in size, until finally nothing remains but a layer of cortical callus on each side of the break, under the periosteum.

This is indeed a beautiful theoretical picture of the healing process and can be obtained only when the fragments are exactly coapted as in wounds of the soft parts when you get healing by **first intention.** Unfortunately, the exact coaptation of the fragments is the exception rather than the rule, and you get healing by **second intention** with imperfect alignment, its usual deformity and with limited function. This brings me to the mechanical side of fractures.

We may liken the long bones to levers, to which are attached the muscles which create a pull and counterpull, with the result that the fragments are more or less displaced from their normal positions. To get the displaced fragments into position and keep them so, taxes one's ingenuity to the utmost and calls for a fair knowledge of the power exerted by the muscles involved, and a peculiar aptitude in overcoming this power.

To accomplish reduction we have the old method of extension and counter extension, the purpose of which is to tire out the muscles and reduce the shortening due to the fragments; until this is accomplished the fragments cannot be guided into apposition. Once they are in apposition, they will usually stay there if the part is fairly immobilized.

As to the means of keeping the fragments in position there are the various types of splints of metal, wood, wire-mesh, and the moulded plaster. Personally, I prefer the latter when properly applied, excepting, of course, in certain conditions where special mechanical appliances are indicated, such as the Thomas and Jones splints for extension and the Carl P. Jones splint in cases of fracture of the surgical and anatomical necks of the femur and in fractures of the pelvis.

While we are on the subject of splints. How many of us know just where to put our hands on the splints and materials we need to treat a fracture when we are called to meet the emergency? Very few, I would say. Therefore, I would strongly urge the use of the

"fracture cart" in hospital work, or a fracture closet or drawer in the office. Keep all your splints and fracture material, tools, etc., in one place; you will find it much more satisfactory than sending a nurse, assistant, or a member of the family safety pins, adhesive, pliers, plaster bandage, rope, pulleys or what not, while you fume and rage because you can not find them; and in the meantime you or somebody else has undone what you have already accomplished.

In my opinion, there is no patented apparatus on the market which is a panacea for all fracture problems. I have seen several types, and I admit they are sound in principle and perhaps a nicety; but I believe the same thing can be done by the use of your brain, a little common sense and access to the machine, tin, carpenter or blacksmith shop.

In fractures of the femur, I use skeletal traction, with ice tongs, when not contra-indicated, in conjunction with a modified Thomas splint and the double Balkan frame built over an ordinary hospital bed.

I think the outstanding contra-indication to the ice tongs is a fracture just above the condyles with longitudinal fracture into the joint. In these cases the Steinman pin has its proper use, as it can easily be seen that, by aligning the fragments of the longitudinal fracture and transfixing them with the pin and using it to make traction with, the same as the tongs, there is very little, if any, chance of disturbing the already aligned longitudinal fracture or fractures.

Now as to the internal fixation of fractures of the long bones. I agree that at times the reduction and maintenance of the fragments in position seems a hopeless task, especially the comminuted types; and one is immediately tempted to resort to bone grafts, bone screws, metal bands and plates and what not; but **don't do it** until you have exhausted all your bag of tricks, as you are inevitably inviting more trouble than you already have.

My choice of internal fixation materials, is the autogenous bone graft, devised by Albee of New York; and second, the oxbone screws. If you are smart and want to avoid malpractice suits, **let the Lane's plates alone.** In the oblique and spiral fractures, the Asa Collins band has its rightful place.

A word as to the supervision and after care of fracture cases. To me this is all important, as no matter how perfectly the fracture has been reduced or how well the perfectly adapted splint has been applied, neglect in daily checking of the position of the fragments, the condition of the limb itself and the general condition of the patient will, in a good many instances, produce a poor or even disastrous result.

A portable x-ray unit for bedside examination of fractures is most useful in this matter of checking, and no one engaged in extensive fracture work should be without one.

The age and general health of fracture cases should receive careful consideration, especially those suffering from syphilis for its effect in producing non-union, and tuberculosis for its debilitating and wasting effect; especially, as these cases are confined to bed, without exercise and with insufficient sunshine and fresh air for unusually long periods of time. Therefore, proper treatment of these conditions should be instituted at the beginning. I have a standing order in my hospital for 30 grains of potassium iodide daily in all fracture cases.

The attitude of the patient towards treatment must be considered; very often, the difference between a good and bad result depends upon his help or hindrance. It is surprising what a little heart to heart talk and a simple explanation of what you are trying to accomplish will do for an unruly fracture patient.

After you have gotten what you think is a good result and you are ready to discharge your patient, I think it very important that you caution him about the strenuous use of the member, explaining that it has been seriously injured and should be favored for at least six months; and then have him report to you at the end of that period for your follow-up.

Of the bad results in simple fractures that of non-union is the most pitiful. I have used preparations of parathyroid and lime and have also tried the intramuscular injection of blood serum from convalescing or recently recovered, healthy fracture cases, but with no definite results. Autogenous bone grafts in non-union have given the best results in my hands.

Alibis are not in order in fracture work; nevertheless, we do get bad results; sometimes this is the fault of the surgeon, sometimes due

to circumstances beyond the control of the surgeon and sometimes through the fault of the patient himself. When you get them, what are you going to do? Break up the union and try again? Personally, I should say **no**; providing the functional result is at all worth while. You are again inviting trouble and grief.

To summarize: Use your common sense and the knowledge you have, coupled with your aptitude for fracture work and you will usually come out on top. If you do not have the above qualifications, let fractures alone and call for the help of some one more experienced and consequently more proficient.

TREATMENT OF INFLAMMATIONS BY X-RAY

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The medical literature contains references to the successful treatment of the following inflammatory diseases and lesions by roentgen therapy:

Actinomycosis.

Adenitis, acute and chronic.

Angina pectoris.

Arthritis—deformans, rheumatoid, gonorrheal and tuberculous.

Asthma (bronchial).

Bronchitis, chronic.

Bronchomycoses.

Eye inflammations,—trachoma, vernal conjunctivitis, scleritis, corneal ulcers, uveitis and uveal tuberculosis.

Fractures,—for non-union.

Fungus infections.

Goitre.

Gynecologic inflammations.

Gonorrhea—(chronic) arthritis, adnexal in male and female.

Inflammatory lesions in general.

Mastoiditis,—acute and chronic.

Neuralgias and neuritis.

Pneumonia,—unresolved.

Raynaud's disease.

Pyogenic infections of all sorts.

Sinusitis,—acute and chronic.

Skin inflammations,—Acute, as carbuncle, furuncle, cellulitis, erysipelas, onychia and paronychia. Chronic,—Sycosis, ringworm of the scalp, lichen planus, pruritus, favus, acne, keloid, lupus, granuloma annulare, prurigo, psoriasis, pompholyx, verrucae, clavus, eczema, rhinoscleroma, erythema induratum, tuberculosis cutis and tuberculides, epidermomycoses.

Tonsils,—hypertrophied or infected.

Tuberculosis,—of glands, bones and joints, larynx, female adnexa, peritoneum.

Ulcer, gastric and duodenal.

Venereal ulcers and bubo.

When an agent of such evident possibilities as the newly discovered x-ray was placed in their hands, it is not at all remarkable that the medical profession should begin to use it empirically in all sorts of conditions. Thus we find that the first decade following Roentgen's discovery was given over to a trial and error method of investigating the effects of this marvelous and penetrating ray. All sorts of lesions were treated and its effects naturally became first established in the visible lesions of the skin. By the end of the first decade of the use of x-ray, it had become evident that the remedy was a potent one, but a two-edged sword frequently cutting in an undesired direction. By 1905, not only had its ability to destroy malignant growths been proven, but its use in the inflammatory lesions of the skin, lymph glands and mucous membranes had become well established. Beginning with 1905, there is given below a chronological summary of the most important articles which discuss the use of roentgen rays in inflammatory lesions. This is not intended to be a complete or comprehensive bibliography on radiotherapy in inflammations. After the first few years, the articles on dermatologic lesions and the articles of a research nature are not listed. Only the papers of a clinical nature, reporting results on treated patients, are given below. This list of papers is presented in this manner for several reasons: first, to give a general view of the growing experience in this field; second, to show how early roentgen rays were used in treating inflammations and how persistently this has been continued; third, to demonstrate how tardily the profession accepts new methods, even when their merit is

proven; fourth, to make it convenient for those desiring to consult the references to find them.

1905

1. Comroe (Amer. Med., June, 1905) summed up the "Present Status of Roentgen Ray Therapy in Dermatology." After discussing the malignant skin lesions which are amenable to x-ray treatment, he says that "great benefit may be looked for in eczema, sycosis, tinea tonsurans, verruca, lichen planus, . . . localized pruritus, favus, etc.

2. Boggs (Med. News, May 6, 1905), summarized the "Treatment of Non-Malignant Diseases by X-ray," and the principles which he laid down are still excellent for present day methods. Among the lesions for which he said "x-ray is the most efficient therapeutic agent" are included acne and many other skin diseases, lupus (supplemented by Finsen light), certain tuberculous glands and selected cases of goitre.

1906

3. Comroe (N. Y. Med. Jour., Oct. 13, 1906) advocated use of x-rays in selected cases of neuritis.

4. Ring (J.A.M.A., Sept. 29, 1906) made a very excellent presentation of "The Value of X-rays in Ocular Therapeutics." Included in this was a very complete summary of the reports on the use of x-rays in trachoma. He recalled Mayou's presentation of the first case so treated, before the London Ophthalmological Society in 1902, and his subsequent paper on the subject (Arch. of Roentgen Ray, January, 1903); he also quoted from other papers; (Stephenson and Walsh, Med. Press, 1903; Walsh, Lancet, No. 10, 1903, 237; Vassutinsky, Vratch, Jan. 8, 1905; Pardo, Gaz. de Ospadali, Milan, No. 13, 1193; Geyser, Jour. of Adv. Ther., May, 1904). Ring also gave results of treatment of vernal conjunctivitis, chronic conjunctivitis, scleritis, episcleritis, corneal ulcers, uveitis, tuberculosis of conjunctiva, in all of which the evidence was favorable for its use.

5. Anders, Daland and Pfahler (J.A.M.A., May 19, 1906) wrote on "The Treatment of Arthritis Deformans by Roentgen Rays," reporting two cases in great detail. They cited the reports by Moser on gout and rheumatism (Centbl. f. chir., 1904, No. 23, 712), and particularly the work of Sokolow who had treated acute and chronic rheumatism in children as early as 1897 (Vratch, 1897, No. 46).

6. Coyle (Med. Electrol. & Radiol., 7: 139, 1906) wrote on "Odds and Ends of X-ray Work, Including Some Cases of Carbuncle."

7. Sklodowsky (Deutsches med. wochen., XXXII, 32, 1906) reported treating a case of exophthalmic goitre with striking improvement.

8. Faber (Hospitalstidende, Copenhagen, XIX. No. 26, 1906), reported treating a case of intractable trigeminal neuralgia with entire relief from pain.

9. Schilling (Muchener med. wochen., LIII, 37, 1906) made the first of a series of reports on "X-Rays in Chronic Bronchial Affections."

1907

10. Ballin (N. Y. Med. Jour., Feb. 16, 1907) reported cure of a case of rhinoscleroma of 16 years standing, initiating the method which soon became almost specific.

11. Edsall and Pemberton (Am. Jour. Med. Sci., Feb., 1907) reported five cases of unresolved pneumonia treated with excellent results.

12. Feldstein (N. Y. Med. Jour., Jan., 1907) summarized the results in "Treatment of Tuberculous Glands of the Neck by the Roentgen Ray." The method had already become well established and was being successfully used by many roentgenologists.

13. Faber (Hospitalstidende, Copenhagen, Aug. 21, 1907) reported the successful treatment of four cases of simple goitre, eight cases of exophthalmic goitre, and seventeen cases of neuralgia (six showing no improvement). X-rays were by now being widely used in Europe for exophthalmic goitre.

14. Freund (Munchener med. wochen., XLIV, No. 17, 1907) writing on "The Roentgen Treatment of Exophthalmic Goitre," reviewed the experiences of about a dozen authors who had previously reported on this therapy and reported five cases of his own.

15. Immelman (Berliner glin wochen., XLIV, No 15, 1907) reported a series of ten patients treated according to Schilling's method for chronic bronchitis and bronchial asthma.

16. H. W. Van Allen (J.A.M.A., Feb. 2, 1907, p. 45) wrote an excellent paper on "Roentgen Rays in Treatment of Lupus Vulgaris," reviewing the work done in Europe, and gave his own results in fifteen patients, 80 per cent of whom were cured.

17. Beaujard and Lhermitte (Semaine Medicale, Paris, XXVII, 17, 193) reviewed the previous reports of Raymond, Gramegna and Beclere in treating syringomyelia and declared that this method had entirely modified the clinical history and prognosis of the disease. They added four more reports to the previous list of six.

1908

18. Mason and Files in two separate articles (N. Y. Med. Jour., June 13, 1908) wrote on x-rays in pruritus ani.

19. Cole (Jour. Ind. State Med. Assn., March, 1908) reported his experience in "Treatment of Tuberculous Glands and Goitre with Roentgen Rays."

20. Schwarz (Wiener klin. wochen., Sept. 17, 1908) reported on the results in treating forty cases of exophthalmic goitre during the previous three years. Benefit on nervous system was marked in all, 36 had pulse reduced, 26 gained in weight, goitre reduced in 8, and exophthalmos improved in 15.

21. Pfahler (N. Y. Med. Jour., Oct. 24, 1908) made the first of a continuous series of reports over 25 years, on "Results Obtained by X-ray Treatment of Exophthalmic Goitre." His conclusions drawn at that time have changed only to strengthen in emphasis during the quarter of a century of experience: (1) Decided improvement may be expected in about 75 per cent of cases. (2) Improvement consists of an increase in weight and strength, and gradual disappearance of the Basedow symptoms. (3) Some improvement should be noticed within a month, and after from 6 to 12 treatments. (4) When this treatment is properly given there seems to be no danger, and Pfahler can see no objections to recommending trial of a month in all cases.

22. Gottheil (J.A.M.A., Nov. 21, 1908) wrote on "'X-ray Uses, Dangers and Abuses." He claims to be an iconoclast, but his article is entirely sane. He advises the use of x-ray only by those thoroughly familiar with the method; that it should not be used for lesions where there are other efficacious and safe remedies. He advises its use in lupus vulgaris, ringworm of the head and beard, in tuberculosis, in mycosis fungoides, rhinoscleroma, keloid and acne keloid, in all of which no other remedy has given such good results. Dermatologists of 1934 could read this so-called "iconoclastic" resume with profit.

1909

23. Rydygier (Berliner klin. wochen., Jan. 25, 1909) reported his results in 14 patients with rhinoscleroma.

24. Reyn (Hospitalstidende, Copenhagen, Sept. 1, 1909) reported on "Roentgen Ray Treatment of Skin Diseases," including 184 patients with eczema, only 17 of whom failed to respond favorably.

25. Jorgensen (Hospitalstidende, Copenhagen,

Dec. 9, 1909) wrote on "Roentgen Ray Treatment of Exophthalmic Goitre," reporting rather unfavorably on the treatment of this lesion by x-ray.

26. Sabouraud (Ann de Derm. et de Syph., Paris, July, 1909), the pioneer in the treatment of ringworm of the scalp by x-ray, reported his experience of five years, during which time he had treated more than 2000 patients for this ailment. He discussed all phases of the disease and its treatment.

27. Price (Pa. Med. Jour., Dec., 1908) wrote on "Roentgen Ray Treatment of Exophthalmic Goitre."

28. Macleod (Lancet, London, May 15, 1909) reported his experience since 1905 on "Treatment of Ringworm of the Scalp."

29. Adamson (Ibid) wrote on the same subject, describing Kienbock's Technic.

30. Rodman (Ky. Med. Jour., February, 1909) reported on "Roentgen Rays in Treatment of Tuberculous Cervical Glands."

31. Buschke (Therap. der Gegenwart, Berlin, January, 1909), wrote on "Roentgen Ray Treatment of Venereal Ulcers."

32. A. L. Gray (J. A. M. A., May 1, 1909), writing on "Some of the Possibilities and Limitations of the X-rays as Therapeutic Agent," included inflammatory diseases of the skin among them.

33. A. H. Pirie (Med. Press & Circular, London, Apr. 7, 1909) wrote a general paper on "X-ray Treatment of Tuberculous Glands."

34. Holmgren and Wiman (Nordiskt Med. Arkiv., Stockholm, XVI, 1909) reported a case of syringomyelia successfully treated.

1910

35. Kuchendorf (Deutches med. wochen., Berlin, May 26, 1910) reported successful roentgen treatment of two patients with exophthalmic goitre, one of whom had been operated upon with recurrence.

36. Falta (Zeit f. klin. med., Berlin, Aug. 20, 1910) wrote on the same subject.

37. Leonard (Med. Rec., July 23, 1910) wrote on "Lupus, its Treatment by Roentgen Rays."

38. Granger (Jour. Adv. Ther., Sept., 1910) wrote on "Roentgen Ray Treatment of Rheumatoid Arthritis."

39. Chas. F. Leonard (J.A.M.A., May 14, 1910) writing on "Treatment of Tuberculous Cervical Adenitis," laid down the principle which the general profession has been slow to learn: "It is, therefore, evident that roentgen treatment is the most effective method of treating tuberculous cervical adenitis in all its varieties ,and that the best cosmetic and equally permanent results can be obtained in the early stages of the disease without operation."

40. Boggs (N. Y. Med. Jour., Feb. 19, 1910) wrote on "Treatment of Cervical Tuberculous Lymphadenitis and Tuberculous Dermatosis by X-ray."

41. Schilling (Munchener med. wochen., May 3, 1910), again discussed "Roentgen Ray Treatment of Chronic Bronchitis and Bronchial Asthma."

42. Wilms (Deutsches med. wochen., Berlin, Feb. 10, 1910) stated that he had found x-ray exposures all the treatment necessary in tuberculous processes in the fingers, hand, foot, elbow and ankle in adults; he had also successfully treated laryngeal tuberculosis by x-ray exposures.

1911

43. F. Barjon (Lyon Chir., Lyons, Dec., 1911) reported on the treatment of inflamed and suppurating cervical lymph nodes.

44. Baisch (Berliner klin. wochen., Oct. 30, 1911) reported experiences in treating fungous joints lesions and tuberculous lymph nodes.

45. Scott (Jour. Mo. St. Med. Assn , Oct., 1911) wrote on Roentgenotherapy of Goitre."

46. Rydygier (Zentr. f. chir., Leipsic, Sept. 2, 1911), reported again on "Roentgen Ray in Treatment of Rhinoscleroma.

47. Nemenow (Arch. f. klin., chir., Berlin, Nov. 25, 1911) wrote on same subject.

48. Bulkley (J.A.M.A., June 10, 1911, p. 1706) stated that the workers in this country had not secured the uniformly successful results in treating ringworm of the scalp as had been reported by Sabauraud, Macleod, Adamson and Kienbock, which caused him to visit England and France and observe at first hand the technic of the single dose epilation treatment. At the Downs School near London he found over 1000 patients had been treated in 1909 and 600 in the first six months of 1910. In the London Hospital about 2000 patients had been treated by Sequiera since July, 1906, when the work started. The technic of producing epilation by exposure of five areas of the head, is described.

1912

49.Tousey (Med. Rec., May 10, 1912) wrote on "Case of Exophthalmic Goitre Cured by Roentgenotherapy."

50. Manneberg (Wiener klin. wochen., Vienna, May 1, 1912) wrote on "Treatment of Exophthalmic Goitre by Roentgenotherapy of the Ovaries." He reported ten cases. Several radiologists now regularly use radiation to the ovaries as supplemental treatment in roentgen therapy of toxic thyroid.

1913

51. Neu (Deutsches Zeitschr fur. chir., Leipsic, February, 1913) writing on "Roentgenotherapy in Surgical Tuberculosis," stated that experiences of sixteen years had established the efficacy of roentgen treatment of tuberculous lymph nodes and processes in bones and joints, in laryngeal tuberculosis and in tuberculous peritonitis.

52. Newcomet (J.A.M.A., Nov. 8, 1913, 1744) reported three cases of Raynaud's diseases healed by roentgen treatment.

53. Levy (Zentrbl. f. chir., Leipsic, Jan. 25, 1913) reported on healing actinomycosis by the same technic as for tuberculous lesions.

54. Iselin (Deutsches med. wochen, Berlin Feb. 13, 1913) reported his results in treatment of 300 patients, since 1907, with glandular tuberculosis These were all ambulant patients. In 81 of them there was an associated bone or joint tuberculosis.

1914

55. Frankel (Zentrbl. f. chir., Leipsic, June 27, 1914) reported eight cases of fracture in which callus formation was enhanced by roentgen treatment.

56. Ochler (Muhchener med. wochen., Oct. 6, 1914) reported results in treating accessible surgical affections, especially tuberculosis.

57. Scaduto (Policlinico, Rome, Jan. 18, 1914) wrote on "Roentgen Treatment of Surgical Tuberculosis."

1915

58. MacKee (J.A.M.A., Nov. 17, 1915, p. 1886) in writing on "Roentgen Treatment of Skin Diseases" includes a section on inflammatory lesions, advising its use in erythema induratum, granuloma annulare, prurigo, psoriasis, eczema, lichenification, pompholyx, tuberculosis cutis, lupus erythematosus, rhinoscleroma (for which he says it is a specific), clavus, callositas and verrucae.

59. Dosseker (Therap. monats., Berlin, Aug., 1915) wrote on "Roentgen Ray Treatment of Acne."

60. MacKee and Remer (Med. Rec., Aug. 7, 1915) wrote on "Roentgen Ray Treatment of Ringworm of the Scalp." In spite of results obtained abroad and the apparently established technic (ref. 48) these authors still said that the divided dose technic is usual in this country.

61. Kall (Munchener med. wochen., Munich, Oct. 19, 1915) writing on "Roentgen Treatment of Venereal Bubo" gave his experience of 18 months and advocates this method as the routine treatment.

62. Araujo (Brazil Medico, July 8, 1915) also wrote on "The Cure of Venereal Granuloma under Roentgen Exposure."

63. M. Frankel (Med. klinik., Berlin, Feb. 21, 1915), reported his experience in nine cases of fractures which would not heal; callus formation was brought about in all.

1916

64. Dunham (Am. Jour. Roent., May, 1916) wrote on "Treatment of Carbuncles by Roentgen Rays." He recalls Coyle's report of 1906 as the only reference in literature to the use of x-rays for this lesion. His own report covered 67 consecutive cases, his attention having been called to its value by Dr. Wainwright of Scranton, Pa., a surgeon. He stated that "nothing in roentgenotherapy gives such positive and uniformly perfect results as the treatment of carbuncles."

65. Skinner (Texas St. Med. Jour., Feb., 1916); Roentgen therapy in inoperable surgical situations.

66. Ruggles (Calif. St. Med. Jour., Dec., 1916); Roentgen therapy in localized pyogenic infections.

1917

67. Kempster (Lancet, Sept. 15, 1917); Roentgen rays and diseases of bacterial origin.

68. Gerber (R. I. Med. Jour., Feb., 1917); Roentgenotherapy.

69. Wilkinson (Southwestern Med., May, 1917); Roentgenotherapy.

70. Marchbanks (J. Tenn. M. A., Sept., 1917); Roentgen therapy in skin diseases.

71. Soiland (U. S. Naval Bull., July, 1917); Roentgen therapy in skin diseases.

1918

72. Phillips (Lancet, March 23, 1918); Roentgen therapy of female pelvic diseases.

1919

73. Russ and others (Lancet, April 26, 1919); Experimental studies with small doses of x-rays.

1920

74. Van de Velde (Zentbl. f. Gynak., Sept. 4, 1920); Roentgen therapy in adnexitis.

75. Johnston (Jour. Okla. Med. Assn., Nov., 1920); Roentgen ray in relation to surgery.

76. Russ, Chambers and Scott (J. Path. & Bact., Dec., 1920); Effects of x-rays upon lymphocytes.

77. Nakahara and Murphy (Exp. Med., Jan., 192); Studies on x-ray effects.

78. Beer (Wis. Med. Jour., Sept., 1920); Roentgenotherapy in dermatology.

79. Weinberg (Arch. Int. med., May, 1920; Influence of exposure to roentgen ray on progress of tuberculosis.

80. Klewitz (Munchen. med. wchnschr., March 5,1920); Effects of roentgen therapy in twelve different internal diseases

1921

81. Murphy, Witherbee and others (Jour. Exp. Med., June, 1921); Effect of small doses of x-ray on hypertrophied tonsils and other lymphatic structures of the nasopharynx.

82. Phillips & Finkelstein (N. Y. Med. Jour., Oct. 19, 1921); Roentgen therapy in chronic disease of the bones, joints and tendons.

83. Erskine (J. Iowa M. Soc., June, 1921); Use of x-ray and radium in certain non-malignant conditions.

Three articles on dermatology.

84. Levin (J.A M.A., Sept. 17, 1921); Action of radium and roentgen ray on normal and diseased lymphatic tissue.

85. Mory (Munchen. med. wchnschr., Jan. 28, 1921); Roentgen therapy of internal disease.

86. Dempster (Jour. Mich. Med. Soc.,) Physiological action and therapeutic indications for x-rays.

87. Ludin (Schweiz med. wchnschr., Nov. 24, 1921); Roentgen therapy in internal medicine.

In 1922 the study turned extensively to the biologic effects on blood, blood cells, tissues and organs, 20 articles appearing in that year, 39 in 1923, and 49 such articles in 1924. This was brought about by the development of short wave therapy.

1922

Eight articles on dermatology.

88. Richards (Jour. of Radiology, July, 1922); Some of the less common uses of x-ray therapy. Almost every type of chronic infection will receive some degree of benefit from radiation, and in many the results are so definite as to appear almost specific. Carbuncle, furuncle, onychia and paronychia almost always react satisfactorily. Chronic sinusitis, cystitis, otitis media, arthritis, neuritis and especially tic douleroux are all benefited by x-ray therapy.

89. Goosman (Jour. of Radiol., July, 1922) reported on treatment of persisting infection in the mastoids, after operation; ten cases are described in all of which pain and discharge promptly ceased.

90. Fried (Deutsche zeitschr. f. chir., Leipzig, Nov., 1922) gives the subsequent history of 13 patients who had been treated by x-ray for exophthalmic goitre.

91. Kemp (ibid) wrote on Roentgen rays in subacute inflammatory processes. These included circumscribed peritoneal suppurative processes, furuncles, leg ulcers, chronic suppurative lung lesions.

1923

92. Lewis (Ann. Surg., Nov., 1923) wrote on "Conservative Treatment of Carbuncles," advocating x-ray.

Six articles on dermatology.

93. Southard (Jour. Ark. Med. Soc., June, 1923); Roentgen therapy in treatment of bone tuberculosis and other conditions.

Articles on burns and injuries, following the enthusiastic application of massive doses of x-ray began to appear in increasing numbers. There were 38 in 1923 and 30 in 1924.

94. Guarini (Riforma med., Oct. 1, 1923) Roentgen treatment of infectious diseases.

1924

Nine articles on dermatology.

95. Hodges (Amer Jour. of Roent., May, 1924) reported again on "The Roentgen Ray Treatment of Carbuncles and Other Infections." This report was based on nine large, sloughing carbuncles in all of which pain was promptly relieved and healing brought about.

96. Freund (Wien, klin. wchnschr., June 12, 1924) Roentgen treatment of acute purulent affections.

97. Witherbee (J. Radiol. Jan, 1924) X-ray in various forms of infection.

98. Withers (Am. Jour. Ophth., July, 1924) Value of radiation therapy in ophthalmology.

99. Schuck (Zentrbl. f. chir., June 28, 1924); Roentgen irradiation in inflammation.

100. Heidenhain and Fried (Klin. Wchnschr., June 17. 1924); Roentgen rays and inflammation.

101. Allen (Jour. Iowa Med. Soc., May, 1924); Practical value of x-ray to eye, ear, nose and throat specialists.

102 Figa (Siglo med., July 26, 1924); Roentgen therapy of infectious and parasitic diseases,—referring especially to very small doses in supplemental treatment of malaria.

1925

Eight articles on dermatology.

103. Ross (J. Radiol., July, 1925) wrote on the treatment of hypertrophied and infected tonsils.

104. Flaskamp (Deutsche med. wochen., Oct. 30,

1925) wrote on the treatment of inflammatory conditions of the adnexa by the production of temporary amenorrhea.

105. Black and Black (Internat. J. Med. & Surg., Oct., 1925) reported on results in treatment of 13 cases of carbuncle, all successful.

106. Gerber (J.A.M.A., Oct. 3, 1925) reported results in treating bronchial asthma and chronic bronchitis.

107. Hodges (J.A.M.A., Oct. 24, 1925), reported again on results in treating local inflammations, cellulitis and carbuncles.

108. Howe (N. Y. State J. Med., Jan. 23, 1925) wrote on treating ten cases of bronchomycoses.

109. Lenk (Med. klinik., April 17, 1925) reported his experience in more than 50 cases of gastric and duodenal ulcer, usually old intractable cases.

11. Albert (R. I. Med. Jour., June, 1925); X-rays in treatment of various inflammatory conditions.

111. Jarvis (Ann. Otol, Rhin. and Laryngol, 925) wrote on roentgen ray therapy in non-surgical treatment of ear, nose and throat diseases.

112. Baensch (Arch. f. klin. chir., 135:567, 1925); results after roentgen therapy of surgical affections.

113. Edwards (New Orleans M & S. Jour., July, 1925); Roentgen ray therapy, including use in inflammatory conditions.

1926

Three articles on dermatology.

114. Holzknecht (Amer. Jour. of Roent., April, 1926) wrote on roentgen treatment of spontaneous, post-traumatic and postoperative coccus infections and suppurations. He reviewed the work of Heidenhain and Fried begun in 1915 and concluded with this statement: "In the roentgen radiation of coccus inflammations, we are undoubtedly dealing with a great forward step in roentgen therapy, a step which extends far beyond the bounds of our limited field. Practically all phases from paronychia to facial phlegmons, from pneumonia to parametritis, and all special fields will participate in it."

115. Tsuzuki (Amer Jour. of Roent., August, 1926) reported on experimental irradiation of the whole body with short wave x-rays. His observations aided in explaining the action of x-rays in inflammation.

116. Lawson (Radiology, Feb., 1926) writing on treatment of pyogenic infection by x-ray, said "too much attention is given x-ray in malignancy and not enough to its application to acute and chronic pyogenic infections."

117. Bauer (Munchener med wochen., April 17, 1926) reported on 100 cases of acute and chronic inflammations treated by Heidenhain's method.

118. Scheerer (Klin Monatsbl. f. Augenb., July-August, 1925) wrote on roentgen treatment of uveal tuberculosis, citing 36 cases, 3 with sclerosing keratitis.

119. Bergerhoff (Strahlentherapie, 1926) reports his experience in treating bronchial asthma by x-ray.

120. Zimmern & Coutard (Jour d'radiol. et d'electrol., Paris, July, 1926), described technic of treating neuralgias by radiating roots of affected nerves. Report covered 67 cases of sciatica with 11 failures; 41 cases of brachial plexus with 9 failures.

121. A discussion before the Section of Surgery of the Royal Academy of Medicine of Ireland, reported in Lancet of April 17, 1926, brought out the fact that roentgen treatment of goitre gave about the same percentage of permanent cures as surgery (75%).

122. Belot (Medicine, May, 1926) Radiotherapy of infectious processes.

123 Kingreen (Deutsche Ztschr. f. chir., 197:10, 1926); Roentgen ray treatment in acute inflammations; included carbuncles, furuncles, parulis, erysipelas and gonorrheal arthritis.

124. Schuler (Munchener med. wochen., Sept. 17, 1926); Roentgen irradiation of acute inflammations.

125. Lukowsky (Beitr. z. klin. chir., 136:554, 1926) reported that out of 123 cases of inflammation treated by x-ray, there was rapid healing in 15, more rapid healing than usual in 57, no increase in rapidity in 15 and no improvement in 37. Best results were obtained in carbuncles, furuncles, inflammation of inguinal glands, abscess of axillary glands and arthritis deformans.

126. Wagner (Strahlentherapie, 24:52. 1926) Roentgen therapy of inflammatory conditions in gynecology. Whenever conservative treatment of the inflammatroy process is indicated, small doses of x-ray should be used. Experience covers 350 cases. In puerperal parametritis the results were one hundred per cent perfect; in gonorrheal infections and diffuse peritonitis the results were good in 75 per cent of the cases.

1927

Sixteen articles on dermatology.

127. Wagner (Strahlentherapie, Jan. 8, 1927); Radiotherapy in inflammatory conditions.

128. Kraus (Med. klin., Feb. 18, 1927); Roentgen treatment of inflammatory processes of the extremities.

129. Fraenkel & Nissnjewitsch (Strahlentherapie, 24:87, 1926); On the roentgen treatment of surgical inflammatory processes.

130. Heidenhain and Pordes (Strahlentherapie, 24: 1926. 3 articles); Roentgenotherapy and inflammations.

131. Archer (Va. med. mo. Jan., 1927); Roentgen ray treatment of subacute infections.

132. Levy and Golden (Amer. J. of Roent., Aug., 1927) wrote on the effects of x-ray on the heart in rheumatic carditis.

133. Gerber (Radiol. Review, Sept., 1927); x-ray treatment of superficial pyogenic infections.

134. Schaefer (Arch f. klin. chir., 146:394, 1927); Effect of roentgen ray on inflammation.

135. Mittermaier (Deutsche Ztschr. f. chir., 203-204:557 and 205:197, 1927); Experimental roentgen therapy and remote effects of roentgen ray treatment on inflammation.

136. Freund (Klin. wchnschr, July 30, 1927); Roentgen therapy in inflammation.

137. Solomon & Blundeau (J. de radiol. et d'electrol., Sept., 1927); Roentgen therapy in inflammation.

138 Fried (Strahlentherapie, 26:484, 1927); Roentgen therapy of acute suppurative inflammations.

139. Heidenhain (Zentralbl. f. chir., May 7, 1927); Roentgenotherapy of inflammation.

1928

17 articles on dermatology.

140. Seeman (Beitr. z. klin. chir., 141:454, 1927); Results with roentgen ray treatment of acute inflammations.

141. Mittermaier (Ztschr. f. Hals, Nasen u. Ohrenh. 18:260, 1927-28); Roentgen treatment of inflammatory processes, especially of the mucosae.

142. Guthmann (Klin. wchschr., June 24, 1928); Treatment of inflammations with x-rays.

143. Aruffi (Actinoterapia, April, 1928); Proteintherapy and roentgen ray in acute infections.

144. Fried (Acta radiol., 9:109, 1928); Roentgen ray irradiations of acute and subacute inflammations.

145. Abbati (Radiol. med., Oct., 1928); Roentgen therapy in inflammation.

146. Gabriel (Med. weit., March 26, 1927); Roentgen therapy of inflammation.

147. Bardachzi (Strahlentherapie, 28:205, 1928); Roentgen therapy of inflammatory complications of scarlet fever.

148. Levy & Golden (Amer. Heart Jour., Dec., 1928); The treatment of rheumatic carditis by roentgen irradiation of the heart.

1929

27 articles on dermatology, mostly Grenz rays.

149. Viethen (Jahrb. f. Kindern., Jan., 1929); Low voltage roentgenotherapy in acute inflammations.

150. Barbacci (Actinotherapia, Aug., 1928); Mechanism of effects of roentgenotherapy on pyogenic processes.

151. MacKenzie (W. Va. Med. Jour., Jan., 1929) Use and abuses of roentgen rays in inflammatory conditions.

152. Carter (Radiology, Jan., 1929); Analgesic properties of roentgenotherapy. Refers to Desjardins' paper in 1927 (Rad , April, 1927).

153. Seisser (Strahlentherapie, XX:471, 1929); Value of roentgenotherapy in inflammation of the genitals.

154. Rybak (Vrach. gaz., May 31, 1929); Roentgenotherapy in acute suppurative conditions.

155. Businco (Radiol. med., June, 1929); Experiments with roentgenotherapy in inflammation.

156. Pordes (Strahlentherapie, 33:147, 1929); Effect of roentgen irradiation on acute inflammatory conditions.

157. Palugyay (Wien. med. wchnschr., July 20, 1929); Indications and technic of roentgen treatment in acute and chronic non-specific inflammation.

158. Rosenberg (Am. Jour. Dis Ch., March, 1929); Treatment of acute cervical lymphadenitis following upper respiratory infections, reporting 80 cases. In 85 per cent the inflammation promptly subsided, eight of them developing suppuration. It is the best treatment for this condition.

159. Samuel (Sou. Med. Jour., June, 1929); Office treatment of pertussis.

160. Andrews (Am. Jour. Surg., April, 1929); The treatment of boils and carbuncles. Specific abortifacient treatment by x-rays.

1930

31 articles on dermatology, many about Grenz ray.

161. Hodges (Sou. Med Jour., March, 1930); Rationale of roentgen therapy.

162. Sulger (Chirurg., Dec. 1, 1929); New method of treatment of suppurative processes by roentgen rays.

163. Freund (Klin. wchnschr., March 22, 1930); Origin of inflammation cells in connective tissue; disappearance under action of roentgen rays.

164. Roth and Steiner (Cluj. med., Dec. 1, 1929); Radiotherapy in acute inflammatory processes.

165. May (Radiology, April, 1930); Roentgen therapy in acute inflammatory conditions.

166. Fukase (Strahlentherapie, 36:92, 1929); Superiority of hard filtered roentgen rays in treatment of wound inflammation.

167. Epstein (Strahlentherapie, 36:170, 1930); Value of roentgen irradiation according to method of Heidenhain-Fried.

168. Chapin (Ill. Med. Jour., April, 1930); Radiotherapy in non-malignant conditions.

169. Higgins (Brit. Med. Jour., Dec. 21, 1929); Treatment by roentgenotherapy of commoner microbic diseases.

170. Pohle (Wis. Med. Jour., July and Oct., 1930); Principles of Roentgen therapy in surgery. Roentgenotherapy in pediatrics, ophthalmology, otology, rhinology, laryngolgy, neurology and psychiatry.

171. Susman (Am. Jour. Roent., August, 1930) reviewed the evidence for the use of radiation in controlling the pain of angina pectoris. He referred to the following articles:

Emery & Gordon (Am. Jour. Roent., 11:328, 1924, and Am. Jour. Med. Sci., 170-884, 1925); Effect of radiation on human heart.

Langer (Am. Jour. Roent., 18:137, 1927); X-rays and autonomic nervous system.

Ecker (Radiology 8:98, 1927); Cases of angina pectoris treated with x-rays.

Desjardins (Radiology, 8:317, 1927); Analgesic properties of x-rays.

Warthin & Pohle, (J A.M.A., 89:1825, 1927); Effect of x-rays on the heart.

Torbett (Am. Jour. Phys. Ther., 6:272, 1929); X-ray treatment of angina.

172. Merritt & McPeak (Am. Jour. Roent., Jan., 1930); Roentgen irradiation of unresolved pneumonia, with comment, "We offer the suggestion that radiation should be given in all cases showing definite roentgen signs of delayed resolution three weeks after onset."

1931

18 articles on dermatology.

173. Freund (Strahlentherapie, 40:333, 1931); Experimental bases for roentgenotherapy of inflammation.

174. Desjardins (J.A.M.A , Feb. 7, 1930, 401); Radiotherapy of inflammation.

175. Henry (Radiology, Jan., 1931); Roentgenotherapy in chronic gonorrheal infection in the female.

176. Guilbert (Paris. Med. Jan. 24, 1931); Action of roentgen rays on pathologic tissues, post-inflammatory sequels and acute inflammatory reactions.

177. Zwerg and Wissmann (Munchen. med. wchnschr., Aug. 7, 1931); Roentgenotherapy of pyogenic infections.

178 Fritsch (Med. klin., Aug. 21, 1931); Roentgenotherapy of acute and subacute inflammations in internal medicine and neurology.

179. Ibid (Aug. 7, 1931); Roentgenotherapy of acute and subacute inflammations in surgical and non-surgical conditions; review.

180. Trostler (Ill. Med Jour., Aug., 1931); Roentgenotherapy of conditions other than malignancy.

181. Granger (New Orleans Med. & Surg. Jour., Aug., 1931); Treatment of infections of the mastoids of infants when there is no sign of destruction present, with fractional doses of roentgen rays.

182. Floris (Radiol. med., April, 1931); Results in roentgen treatment of inflammatory lesions of the female genitalia.

Floris's report included, in addition to the uterine hemorrhages, tuberculous and non-tuberculous adnexitis, gonorrheal vulvo-vaginitis, endometritis, pyosalpinx, puerperal parametritis and plastic pelvic peritonitis.

183. Dorne and White (Arch. Derm. and Syph., Sept., 1931); Radiotherapy in fungus infections.

194. Schiller & Altschul (Strahlentherapie, 41:755, 1931); Roentgen irradiation in surgical tuberculosis.

185. Martius (Strahlentherapie, Oct. 24, 1931); The treatment of tuberculosis of the female genital organs.

186. Mathey-Cornat (Bull. et mem. de la soc. de radiol. med. de France, June, 1931); Successful radiotherapy of cases of pelvic peritoneal tuberculosis in women.

187. Dormann (Strahlentherapie, XLII, 201, 1931); Results of roentgenotherapy in tuberculo-

sis of bones and joints in the surgical clinic of the University of Kiel (1918-1927).

188. Spies (Am. Jour. Roent., November, 1931); The roentgen ray treatment of experimental tuberculosis.

1932

189. Neuschloss-Knusli (Roentgenpraxis, Dec. 1, 1931); Roentgenotherapy of adnexal gonorrhea in man.

190. Mathey-Cornat (Arch. d'electric. med., Oct., 1931); Indications and method of roentgenotherapy of inflammatory conditions.

191. Radu and Ackerman (ann. d'otolaryng, Jan., 1932); Roentgenotherapy of chronic suppurations.

192. Milani (Strahlentherapie, 43:401, 1932); Radiotherapy of inflammations.

193. Lawrence (Memphis Med. Jour., Jan., 1932); X-ray treatment of acute inflammatory conditions.

194. Van Ness (New Orleans M. & S. Jour., April, 1932); Roentgenotherapy of inflammatory and non-malignant conditions.

195. Mathey-Cornat (Gynec. et obst., Aug., 1932); Roentgenotherapy of certain inflammatory diseases; indications, technic and results

196. Milani (Arch. d'electric. med., Jan., 1932); Indications for radiotherapy of inflammations.

197. Bucky (Fortschr. d. therap., Aug. 25, 1932); Roentgenotherapy of inflammation.

198. Dabasi (Orvosi hetil., July 30, 1932); Roentgenotherapy of inflammation.

199. Granger (New Orleans M. & S. Jour., Aug., 1932); Small doses of roentgen rays in inflammatory conditions.

200. Webster (Brit. Med. Jour., Oct. 8, 1932); Treatment of inflammatory conditions by radiation.

201. Buhtz (Frankfurt Zeitschr. f. Path., 44:57, 1932); Beneficial effects of roentgen rays on traumatic inflammation.

202. Liberson (Radiology, April, 1932); Gonorrheal complications in males; reports on 119 cases treated over a period of six years. Method was found uniformly effective in the painful heel due to periostitis, and somewhat less effective in gonorrheal arthritis. Indifferent results in epididymitis, urethritis and adenitis.

203. Schillinger (Radiology, April, 1932); Acute mastoiditis. The writer (an otologist) after a series of 38 cases, makes the following conclusions: (1) Acute mastoiditis without bone destruction frequently resolves under x-ray treatment, after one or two exposures; (2) even with bone destruction it may still resolve; (3) even when operation is indicated, x-ray is a therapeutic agent of great value. Contraindications are outlined and are important.

204. Pfahler (Radiology, May, 1932); Hyperthyroidism An excellent summary of the present status of radiotherapy in this condition. After quoting Krause, who collected 1342 cases from 31 authors, with 82 per cent good results, Pfahler makes the report of his own 594 cases, of whom 87.8 per cent were either cured or showed improvement to a degree which would be regarded as satisfactory after surgery.

"When irradiation fails surgery can still be used; when surgery fails, irradiation can still be used. Medication and the advice of the internist are of value in all cases, but there will remain a small number in which we all will fail."

205. Thorsness (Am. Jour. Roent., July, 1932); Effects of roentgen rays on cytology and absorption from experimental abscesses.

206. Dorne and White (Radiology, April, 1932); Superficial fungus infections. They claimed superiority for the Grenz rays, but several radiologists, in the discussion, questioned this.

207. Menville (Radiology, 1932); Thyrotoxicosis. A symposium with papers by Kunz, Richter, Bartlett, Elliott, Williams, Quigley, Walter, Anson and Ivy and Menville. Menville reported results from a questionnaire giving replies from 75 radiologists in 38 states, covering 10,541 cases treated by radiation. The percentage of cures averaged 66.

208. Ross (Radiology, June, 1932); Radiation of mastoiditis; has been using this for 17 years, and makes report on 41 cases.

1933

209. Plichet (Presse med., March 4, 1933); Roentgenotherapy of inflammation.

210. Solomon, Gibert and Jaude (Bull. et mem. Soc. de radiol., February, 1933); Roentgenotherapy of inflammation.

211. Lammers (Nederl. tijdschr. v. geneesk, March 25, 1933); Roentgenotherapy of inflammations.

212. Keijser (ibid); Roentgenotherapy of inflammations.

213. Levin (Jour. Pediat., March, 1933); X-ray treatment of inflammatory conditions in childhood.

214. Pohle and Ritchie (Radiology, Feb., 1933); Histological changes in skin wounds following postoperative irradiation.

215. Fried (Strahlentherapie, 47:672, 1933); Indications for and limits of radiotherapy of inflammations.

216. Von Kreninger Guggenberger (Strahlentherapie, 48:103, 1933); Experimental studies on roentgen rays in infections.

217. Proto (Morgagni, Sept. 10, 1933); Experimental study of action of roentgenotherapy in inflammation due to pyogenic organisms.

218. Dyes (Strahlentherapie, 47:160, 1933); Principles of roentgenotherapy in inflammation.

219. Wilcox (Texas State Med. Jour., Sept., 1933); Radiation therapy in inflammatory processes.

220. Liebenam and Schonfeld (Monatschr. f. Kinderh, 58:104, 1933); Roentgen treatment of nonspecific inflammatory processes in Children's Clinic, Leipzig.

221. Van der Plaats (Nederl. tijd. schr. v. geneesk., May 6, 1933); Roentgenotherapy of inflammation.

222. Desjardins (Proc. Staff Meeting, Mayo Clinic, Oct. 18, 1933); Trend of radiotherapy; treatment of inflammatory lesions.

223. Torbett (Texas State Med. Jour., Nov., 1933); Roentgenotherapy as an aid in some chronic conditions.

After its efficacy was proven, more than a decade passed before radiotherapy gained recognition as an accepted method of treating malignancy. Radiologists the world over had been curing cancers in all parts of the body for twenty years or more before the Lake Mohonk Conference of the American Society for the Control of Cancer, in 1925, gave official recognition to radiotherapy on a footing equal to surgery as a method of treating malignancy.

History is repeating itself and the same development is taking place with regard to the use of roentgen rays in treating inflammation. The evidence is not yet generally accepted, although it has been accumulating for more than thirty years, that roentgen therapy is

valuable in a great variety of inflammatory lesions. Roentgenologists cannot be accused of pushing their ideas in this field with excessive enthusiasm. When history has been written and we come to the eventual position of using x-ray therapy routinely in many inflammatory conditions where it is now seldom even thought of, the thing about which we will wonder most will be the fact that we possessed this potent remedy whose efficacy was proven and repeatedly recorded over a period of twenty-five years, and neglected to use it. Then the radiologist will be accused of hiding his light under a bushel because he did not insist on a more general application of roentgen rays in infections.

The chronological review of the most important articles appearing in the European and American medical journals, since 1905, is an almost dramatic demonstration of the tardiness with which the medical mind accepts new ideas. There are one or two outstanding examples of this, which will serve as illustrations.

CARBUNCLE

(6, 64, 92, 95, 105, 107, 123, 160.)

In 1906 Coyle reported the successful treatment of carbuncles by x-ray. For ten years no attention was paid to this until Dunham (1916) reported the successful treatment of sixty-seven consecutive cases, and drew the conclusion that "nothing in roentgentherapy gives such positively and uniformly perfect results as the treatment of carbuncle." In spite of this challenging statement, seven more years passed before the next report appeared. This time a surgeon (Lewis) in 1913, reported sixteen cases, only two of whom required any surgery whatever. Then in 1924, Hodges reported the treatment of nine large sloughing carbuncles in ALL of whom pain was rfelieved in from six to twenty-four hours and ALL healed; he concluded that "every carbuncle should have roentgen therapy as soon as the diagnosis is made." In the following year George Clinton Andrews, another surgeon, writing on carbuncle, said: "Roentgen therapy is almost a specific in lesions of the superficial type, causing prompt relief of pain, softening and evacuation of pus and rapid recovery, and even in the deep type roentgen therapy is always of some benefit."

With this evidence, when the general profession does not yet accept roentgen therapy as the proven and preferable method of treating carbuncle, using surgery only as an adjunct, it is not remarkable that roentgen therapy is not recognized as valuable in other types of inflammation where the proof is less certain. We must continue to record results until overwhelming proof brings the inevitable change of attitude.

TUBERCULOUS GLANDS

(2, 12, 19, 30, 33, 39, 40, 54, also articles on inflammation in general.)

Much the same situation exists with regard to the treatment of tuberculous lymphadenitis. This was one of the earliest inflammations treated by x-ray, and the proof of its efficacy is mountainous. In 1905, when Boggs summarized the "Treatment of Non-Malignant Diseases by X-ray" he classed among the lesions for which "x-ray is the most efficient agent" certain tuberculous glands, Hodgkin's disease and selected cases of goiter. Of these, the general profession has accepted x-ray as the appropriate therapy for Hodgkin's disease in which the prospect for curing the disease is almost nil, and has rejected it as the remedy of choice in tuberculous adenitis and toxic goitre in which permanent cures can be expected from x-ray treatment in seventy-five per cent of the patients. The chronological bibliography will show in almost every year papers reporting results in treating tuberculous cervical adenitis until it would seem that the surgeon who elects surgical removal of such lesions in children, without first trying roentgen therapy, is guilty of something more than mere lack of information.

HYPERTHYROIDISM

(2, 7, 13, 14, 20, 21, 27, 35, 36, 45, 49, 50, 90, 121, 204.)

With regard to the treatment of toxic goitre by x-ray the mounting proof of its efficacy has been obscured for a decade or more by the vociferousness of the more numerous and more strongly entrenched surgical specialty. The sound and fury of this has intimidated the radiologists until very recently, when a comprehensive survey of the field brought forth a wealth of proof that x-ray therapy can match percentages of permanent cures with surgery in exophthalmic and other forms of toxic goiter. This has emboldened the most timid of the radiologists until even the writer of this article is now prepared to take his

stand with his radiologic confreres and say that the toxic goiter patient is entitled to his choice of surgery or roentgen therapy, with the assurance that either will be equally certain of bringing about a permanent cure. The differences are that surgery is quicker but has a definite mortality figure; roentgen ray is gradual over a period of months, but has no mortality danger from the treatment.

One of the reasons for the reluctance to accept the idea of x-ray being beneficial in infections was the fact, early demonstrated after Roentgen's discovery, that the ray is not bactericidal. The superficial conclusion, therefore, was that it could not benefit infections, because it did not kill the bacterial agent. Many research workers have given attention to this problem, and have developed many interesting facts. The summary of Desjardins is probably the best to be found in the literature:

In attempting to analyze the action of the rays in inflammatory conditions several points must be taken into account. First, it is well known that in acute, localizing inflammations leukocytic infiltration usually is an important feature, although this varies with different patients. It has also been thoroughly established that leukocytes, especially lymphocytes and polymorphonuclear cells, are the most radiosensitive of all cells. When a tissue or organ rich in lymphocytes is exposed even to a small dose of rays, a certain percentage of the cells are caused to degenerate. Such degeneration takes place very rapidly; indeed, sometimes so rapidly as to resemble a veritable explosion of the cells. It is also well known that radium or roentgen rays in ordinary therapeutic doses have little, if any, direct influence on pyogenic bacteria, or in fact on most bacteria. Consequently, it seems likely that, when an acute inflammatory lesion is exposed to irradiation, the first and main effect is destruction of a certain proportion of the infiltrating leukocytes. It might be thought dangerous to destroy leukocytes which nature has thrown around a clump of invading bacteria in order to protect the organism from the infective process, but after having observed the effect of irradiation on a large number of inflammatory lesions of different kinds I have never yet seen the slightest sign of deleterious effect. When the rays do not have a favorable effect they do not have any effect at all. The only rational explanation for this seems to be that destruction of a certain proportion of the infiltrating leukocytes by the rays causes the liberation of antibodies, ferments, and other protective substances which the leukocytes may have contained, and makes these substances even more readily available for defensive purposes than they were when within the cells.

The same process probably plays the major role in the action of the rays on chronic inflammations, but here other factors also come into play. Such lesions contain a variable amount of connective tissue and in some inflammations, such as tuberculomas and other tuberculous processes, degenerative products including caseous material and calcium in varying proportion often are present. This probably accounts for the fact that in chronic inflammations larger doses are required and must be repeated a number of times at suitable intervals in order to obtain maximal benefit. Doses varying between 50 per cent and 80 per cent of tolerance yield the best results. The degree of leukocytic infiltration on the one hand, and the proportion of connective tissue and of degenerative products on the other hand, probably act in opposite directions with relation to the effect of the rays. If there is little or no leukocytic infiltration and most of the inflammatory products within the lesion have become thoroughly organized, the effect of the rays is slight or nil. On the other hand, if the lesion is treated earlier, when leukocytic infiltration is still present and when degenerative products have not yet reached an advanced stage, the effect of the treatment should be much greater, as we know it to be.

In the writer's experience, very few pyogenic lesions are given the benefit of x-radiation, although the reports over a period of twenty years, especially from the great surgical clinics of Europe are very favorable. Holzknecht visited this country in 1926, by invitation of one of the national societies, and gave the report of the work done during the preceding ten years in the clinic of Heidenhain and Fried and in his own clinic. He reported on 885 cases of spontaneous, post-traumatic and postoperative coccus infections, treated by x-ray, in which one-third terminated promptly by crisis, one-third terminated satisfactorily by lysis, and one-third showed only fair improvement or no results. Numerous reports will be found listed in the bibliography, all of them as favorable as this, and there seems to be little doubt about the favorable effect of x-rays in such lesions in a sufficient percentage of cases to warrant its routine use.

DERMATOLOGIC INFLAMMATIONS

(1, 16, 18, 22, 23, 24, 26, 28, 29, 32, 37, 46, 47, 48, 58, 59, 60, 70, 71, 78 and numerous general reports on inflammation.)

In addition to the acute infections localized in the skin, such as carbuncle, furuncle, cellulitis, erysipelas, the range of use in chronic skin inflammations is wide. In ringworm of the scalp it is the specific remedy, and failure to use it is excusable only when a competent radiologist is not avaliable. The chronic skin diseases in which radiotherapy is the treatment of choice makes a long list. The writer would like to comment specifically on the efficacy of this treatment in epidermophytosis, the fungus infection commonly known as "athlete's foot" although it may occur on any part of the body surface. Dermatologic writers have not generally agreed that radiation is an efficient treatment of this lesion, but experience of radiologists testifies to its efficacy in nine cases out of ten.

SURGICAL TUBERCULOSIS

(42, 44, 51, 56, 57, 93 and articles on surgical lesions.)

In addition to the glandular forms, both bone and joint lesions have been treated with success in many large clinics. The treatment of so-called surgical forms of tuberculosis is a slow process and should be carried out in close cooperation with other methods, such as heliotherapy and conservative surgical procedures. It is a mistake for the clinician or orthopedist to turn the patient over to the radiologist and depend upon a series of x-ray treatments to bring about healing in a bone or joint tuberculosis. Radiation can only be an adjuvant, but when so used and persistently carried through, it is valuable and may often mean the difference between failure and success in attaining results.

ADNEXAL INFLAMMATIONS

(72, 74, 104, 126, 175, 182, 189, 202, and many articles on inflammation in general.)

Here again is a neglected field, in which radiation gives almost uniformly good results. The parametrial inflammations following puerperal infection, gonorrheal salpingitis, the secondary infections associated with malignancy in the pelvis, pelvic tuberculosis, are all amenable to radiation. Pain is relieved, induration disappears, and the active inflammation subsides. The deep adnexal inflammations in the male are also treated with great benefit. The favorable influence on prostatic enlargements recorded by several authors is probably due to the effect on the chronic inflammation rather than on the prostatic hypertrophy.

ANALGESIC EFFECTS

(3, 5, 8, 17, 34, 38, 120, 171.)

The relief of pain in a great variety of conditions has been recorded so often and has become such a commonplace observation with radiologists that they have almost ceased making reports. Neuralgias, neuritis, the pain of arthritis, angina pectoris, syringomyelia, all have been relieved by roentgen ray treatments. The relief is so prompt and spectacular in the very painful gonorrheal arthritis that the procedure can be used as a means of diagnosis from other joint lesions. The painful heel of gonorrhea is also promptly relieved by x-radiation, according to more than one author.

MASTOIDITIS AND SINUSITIS

(89, 111, 181, 203, 208.)

Many writers have recorded the beneficial effects of roentgen therapy in both acute and chronic mastoiditis and sinusitis. Postoperative treatment of the infected mastoid which persistently drains is included in Holzknecht's report, and has been verified by American workers. Certainly a method which is entirely without danger and which offers any sort of hope of aborting a mastoid infection and avoiding the dangerous radical mastoid operation should be given more consideration than has been accorded it. The writer's attention was first called to the beneficial effect of roentgen irradiation in sinusitis by a rhinologist who suffered from a chronic infection of the nasal accessory sinuses. He came at frequent intervals to have a complete set of sinus films made, and finally volunteered the information that he did not have this done for its diagnostic value but for its therapeutic effect. He had found from experience that the amount of exposure required to make the six films necessary for an adequate examination of the accessory sinuses was just the amount of radiation he needed for relief from symptoms for about two months. He stated that he had long since learned never to explore the antrum until x-ray treatment had been tried and failed, and he seldom found it necessary to invade the antrum either through the natural or an artificial opening.

GENERAL

Various writers have reported the successful use of x-ray in infected tonsils, in lymphoid hyperplasia in the pharynx, in lymphadenitis of any sort, in venereal ulcers, in chronic nontuberculous lung infections including bronchitis and bronchiectasis, in conjunctival inflammations including trachoma, in stimulating callus formation in delayed union of fractures, in gastric and duodenal ulcer, and many other inflammatory processes. The wide range of application is not surprising, because the effect of x-ray is upon the inflammatory process and that is essentially the same, whatever the etiologic agent may be and wherever the lesion may be located.

In closing, we would insist that the application of roentgen therapy to inflammations requires the same knowledge, skill and experience which is demanded in treating malignancy. The technic is entirely different, however, and an intimate knowledge of the path-

ology of various inflammatory lesions is more essential than technical equipment or even familiarity with the use of the equipment. Every case is a medical problem in itself, and should be worthy of the conjoined wisdom of clinician, surgeon and radiologist. If the radiation treatment is given and the patient allowed to follow his own devices without medical guidance, or if the necessary surgical aid is not applied at the proper time, the results are likely to be poor. The best results follow when radiation treatment is used as a part of the total treatment; it may often be a highly essential part, but should always be integrated in its proper relation to other general and local measures.

THE NEW MEXICO MEDICAL SOCIETY

Fifty-Second Annual Meeting
Las Vegas, New Mexico
July 19-21, 1934

First Day, July 19, 1934.

The New Mexico Medical Society convened its Fifty-Second Annual Session at Las Vegas, New Mexico, all business and scientific sessions being held in the auditorium of the Elks' Club.

Meeting of the Council.

At call to order by the president, Dr. H. A. Ingalls (Roswell), at 9:30 a.m., there were present:

Ex-officio members: Drs. H. A. Ingalls and L. B. Cohenour.

Members: Drs. R. O. Brown (Santa Fe); E. B. Elliott (Raton); C. W. Gerber (Las Cruces) and Carl Mulky (Albuquerque).

Financial Report

Financial report of the Secretary-Treasurer, Dr. L. B. Cohenour (Albuquerque) was read by him as follows:

Balance on hand at annual report, May 18, 1933	$1,429.99
Delinquent dues collected from 25 members	125.00
Dues from one new member	5.00
Annual dues for 1934 from 190 members	950.00
Total cash received to July 19, 1934	$2,509.99

DISBURSEMENTS

Southwestern Medicine for 165 members for 1933	330.00
Southwestern Medicine for 25 members	50.00
Reporter 1933 meeting, balance of one-half fee	87.50
Treasurer's Bond for 1933-34	5.00
Reporter for 1934 meeting, advance one-half fee	87.50
Secretary's salary for 1932-1933	300.00
Chaves County Medical Society for balance on entertainment indebtedness	150.00
Cordon-Horton, 250 letterheads and 250 2c stamped envelopes	15.23
Albuquerque Stationery Co., Journal	3.20
DeVeau Typewriting Co., Ribbon	.75
Albuquerque National Bank, Federal Tax 20x10x02	.32
Baser Printing Co., 150 Credential cards	3.25
	$1,032.75
Balance	$1,477.24

Outstanding Indebtedness.

Southwestern Medicine for 190 members	$ 380.00
Secretary's salary for 1933-1934	300.00
Reporter for 1934 meeting (Balance in full)	87.50
Treasurer's Bond for 1934-1935	5.00
Approximate total indebtedness	772.50
Expected balance after all bills are paid	704.24

Respectfully submitted,
(Signed) L. B. COHENOUR,
Secretary-Treasurer.

Dr. Carl Mulky (Albuquerque) inquired if the Society was keeping even, or if expenditures were exceeding the receipts.

Dr. L. B. Cohenour (Secreary-Treasurer) replied that his report showed a little gain in amount of expected balance over that of last year due to the fact that there are more members this year.

Dr. C. W. Gerber (Las Cruces) made motion that the Treasurer's report be accepted and approved as read. Motion seconded by Dr. R. O. Brown (Santa Fe) and carried.

Dr. R. O. Brown (Santa Fe) called attention to the desirability of having a paid worker or professional lobbyist to watch proposed legislation affecting the practice of medicine in the State, citing the passage of the recent Osteopath Bill, which, he stated, might have been avoided had the Society had such a representative. He suggested that Judge Wright might be a worthy and able person to handle such affairs, as his long experience and familiarity with legislative proceedings especially fitted him for work of this kind.

Dr. H. A. Ingalls (President) told about trips he made to Santa Fe in opposition to the Osteopath Bill and how he was assured that it would be killed in Committee, only to find much to his chagrin on his return home that the measure had passed.

Dr. L. B. Cohenour (Secretary-Treasurer) stated that he had been informed that the hearing for the measure would be held at ten o'clock a.m. on a certain date. Accordingly he went from Albuquerque to Santa Fe, arriving there considerably before the scheduled time of the meeting (10 a.m.), only to find that the hearing had been held at 7 a.m. and as there was no one on hand to oppose, the measure had been put through and approved.

Dr. Carl Mulky (Albuquerque) suggested that since there is money in the treasury some of it be spent in such a cause, and made motion as follows: "'It is the consensus of opinion among the Council that a professional lobbyist should be employed to look after the interests of the medical profession in New Mexico; that a fund not to exceed two hundred dollars be made available for that purpose, and that Dr. R. O. Brown (Santa Fe) be made responsible for the proper use of that sum." Motion was seconded by Dr. C. W. Gerber (Las Cruces) and carried.

No further business arising the Chair announced adjournment at 9:45 a.m.

Meeting of the House of Delegates

Immediately following adjournment of the Council meeting, the House of Delegates assembled, there being present:

Dr. H. A. Ingalls (President); Dr. L. B. Cohenour (Secretary-Treasurer) and County Delegates, as follows:

Bernalillo—Drs. C. C. Meacham and Carl Mulky (Albuquerque).
Chaves—Dr. R. L. Bradley (Roswell).
Colfax—Dr. C. B. Elliott (Raton).
Dona Ana—Dr. C. A. Miller (Las Cruces).
San Miguel—Dr. J. W. Muir (Las Vegas).
Santa Fe—Dr. R. O. Brown (Santa Fe).
Union—Dr. C. F. Milligan (Clayton).

The Secretary, Dr. L. B. Cohenour (Albuquerque) submitted and read his report of the affairs of the office as follows:

"I hereby render a report of the affairs of the office of Secretary-Treasurer for the term ending with this session:

"At the meeting held in Roswell, New Mexico, May 18, 1933, there were 25 members suspended for non-payment of dues, and immediately following, 25 were reinstated, and one new member was admitted to the Society following this meeting, as member at large.

"Members in the Society at this time are as follows:

	1933	1934
Bernalillo County	46	42
Chaves County	18	24
Colfax County	16	15
Curry County	7	7
Dona Ana County	10	9
Eddy County	4	10
Grant County	9	12
San Miguel County	6	10
Luna County	5	6
McKinley County	8	8
Santa Fe County	13	16
Union County	5	7
Members at large	22	24
Total in good standing this date		190

"Five applications for membership were received to be presented at this meeting and membership cards issued to them in advance.

"Deaths of six members were noted as follows:

William T. Joyner—Roswell, N. M.....Oct. 12, 1933
S. M. Parrish—Raton, N. M.....Dec. 14, 1933
J. H. Johnson—Las Cruces, N. M.....Sept. 28, 1933
R. F. Hogsett—Albuquerque, N. M.....Nov. 26, 1933
C. Plumlee—Hot Springs, N. M.....April 1934
D. H. Carns—Albuquerque, N. M.....May 1934

Respectfully,
(Signed) L. B. COHENOUR,
Secy.-Treas."

Motion by Dr. R. O. Brown (Santa Fe), seconded by Dr. C. A. Miller (Las Cruces) that the Secretary's report be accepted as read, was carried.

Minutes of the meeting of the Council were read by the Secretary, and no objections arising, were ordered approved by the Chair.

Applications for membership were submitted and read by the Secretary, with action taken thereon, after open discussion, as follows:

Becker, J. N.—Parkview, N. M.—Referred to Investigating Committee.
Hayes, E. J.—Referred to Investigating Committee.
Simms, Eugene P.—Alamogordo, N. M.—Elected to membership.
Maxwell, George E.—Magdalena, N. M.—Elected to membership.
Smith, Joseph H.—Laguna, N. M.—Elected to membership.
Scott, S. D.—Elected to membership.

Communications were read by the Secretary, consisting of: Letter proposing lecture tour in the interest of Sexual Reform in the light of Science. The President suggested that the Secretary acknowledge receipt and state that as communities are so widely separated in New Mexico, it would seem impracticable to get together.

Letter from Santa Fe County Medical Society proposing that annual dues be raised $1.00 in order to create a fund to maintain a lobbyist at the capital. The Chair announced such action was not now necessary since the matter had already been disposed of by motion adopted at the Council meeting and approved by the House of Delegates.

Communication from A. M. A., in regard to County Societies appointing Committees on Mental Health. The President suggested that the matter be referred to the incoming President. Copy of letter to Judge Helmick from Dr. D. W. Rife (Santa Fe) in regard to the payment of $16.50 on account, on a bill for $50.00 for expert testimony.

Considerable discussion arose over this subject, participated in by Dr. R. L. Bradley (Roswell), who suggested a fee of $25.00 per day and expenses and Dr. R. O. Brown (Santa Fe), who stated that in Santa Fe County the fee allowed for expert testimony is $50.00 per day and expenses. Motion by Dr. Brown that a Committee be appointed by the incoming President to investigate and report before the session adjourns on the adoption of a uniform schedule of fees for expert testimony in New Mexico, seconded by Dr. C. B. Elliott (Raton), was carried.

Recess was then declared by the Chair until further call, as it was time for the opening of the scientific session, 10 a. m.

Second meeting of the house of delegates was called to order at 1 p.m., July 20; there were present:

President—Dr. C. F. Milligan (Clayton).

Secretary-Treasurer—Dr. L. B. Cohenour (Albuquerque).

Delegates:

Bernalillo County—Drs. C. C. Meacham, Carl Mulky, J. W. Hannett, E. F. Frisbie (Albuquerque).

Chaves County—Dr. R. L. Bradley (Roswell).

Curry County—Drs. H. A. Miller and R. L. Butler (Clovis).

Dona Ana County—Dr. C. A. Miller (Las Cruces).

Grant County—Dr. N. D. Frazin (Silver City).

Luna County—Dr. George T. Colvard (Deming).

San Miguel County—Dr. J. W. Muir (Las Vegas).

Santa Fe County—Dr. R. O. Brown (Santa Fe).

Minutes of the previous meeting were read by the Secretary, Dr. L. B. Cohenour, and approved.

Dr. Cohenour read and presented the credentials of Dr. J. W. Amesse, as Fraternal Delegate from Colorado.

Dr. R. L. Butler (Clovis), representing the Curry County Medical Society, spoke in regard to relief work being done by the physicians in that County and the pay scale therefor, presenting a Resolution which had been passed by the local County Society, urging that some action be taken by the State Society in an endeavor to secure more equitable fees.

Dr. R. L. Bradley (Roswell) stated that members of the local Society at Roswell had talked the matter over and decided they would take 50 per cent of the regular fees and had it understood that they would get paid for surgery in proportion to the other work, but later this arrangement was knocked out and it was found that if any work was done at a hospital, the hospital would receive pay for their end of it, but not the doctor, so that in order for the physician to receive a fee, it was necessary for obstetrics, surgical work of any nature or whatnot, to be done any place but in a hospital.

Dr. C. A. Miller (Las Cruces) told about doctors, who were not members of the local Society, signing up for and being given relief work. Complaint was made with the result that a list was obtained by the Relief Administrator of members of the local Society and work is being distributed among those who care for it.

Dr. N. D. Frazin (Silver City) stated that in his section they were absolutely opposed to any form of so-called state medicine and that the Doctors were doing all that they could to take care of relief work and would continue to do so.

Dr. George T. Colvard (Deming() stated that in his county the physicians had gotten along with relief work much better than they had at first anticipated, but it was a considerable annoyance to have to get an order from the Relief Administrator's Office before making calls on relief patients, and especially after the Relief Office was closed for the day.

Dr. E. F. Frisbie (Albuquerque) thought it should be possible to have obstetric cases arranged for in advance, so that there could at least be a little prenatal care.

Dr. R. L. Butler (Clovis) stated that in his section the physicians would rather do the relief work for nothing than to do obstetrics for ten dollars or medical work for the small fees set on the schedule, and for that reason the County Society had adopted the Resolution presented, but that they were perfectly willing to accept any amendments or abide by any decision the State Society might see fit to adopt.

Dr. R. O. Brown (Santa Fe) explained that no one in the State had anything to do with the affairs of the Administrator, who was appointed directly by the Federal Administrator, from whose office all instructions emanated. He explained the system by which relief is being furnished and stressed the fact that it is simply an emergency measure which might or might not be changed at any time in the near future, and that Doctors could sign up for relief work or not, just as they chose.

Dr. C. F. Milligan (Clayton) called attention to the fact that in his section where there has been a severe drought for the past three years, many of the people are on the relief rolls, and others the doctors were carrying along as best they could, but that the doctors had to live themselves and it had come to the point where they could not afford to turn down the relief work, which at least netted a little something, and also, that other doctors, not members of the local Society, had signed up for relief work and were getting their share.

Dr. R. O. Brown (Santa Fe) stated that at least it was better to keep busy at something, even if the pay schedule was not very remunerative, and suggested that it might be well for the Society to appoint a Committee to look into all phases of the matter and then take up the points at question with the Relief Board.

Dr. H. A. Miller (Clovis) expressed the belief that the subject was one demanding a great deal of constructive thought, which could not be given in a short space of time and favored Dr. Brown's suggestion.

After considerable further discussion, Dr. George T. Colvard (Deming) made motion that the President appoint a Committee of five members to take up within sixty days the matter of Federal Emergency Relief and secure such action as it can, the Society to abide by the findings and decisions of the Committee.

Suggestion was made by Dr. H. A. Miller (Clovis), that the Committee be composed of five members selected from different parts of the State, which was agreed to by Dr. Colvard, and seconded by Dr. J. W. Muir (Las Vegas), and then passed, the correct motion adopted being:

"That the President appoint a Committee of five members selected from different parts of the State to take up within sixty days the matter of Federal Emergency Relief and secure such action, as it can, the Society to abide by the findings and decisions of the Committee."

Dr. L. B. Cohenour (Albuquerque), acting for the President, announced the Committee so appointed, as:

Dr. W. H. Livingston, Santa Fe, Chairman;
Dr. J. W. Board, Clovis,
Dr. R. L. Bradley, Roswell,
Dr. G. T. Colvard, Deming,
Dr. Carl Mulky, Albuquerque.

Other Committees announced were:

Necrology: Dr. R. O. Brown, Santa Fe, Chairman;
Dr. R. L. Bradley, Roswell,
Dr. R. L. Butler, Clovis.

Resolutions: Dr. G. T. Colvard, Deming, Chm.;
Dr. C. A. Miller, Las Cruces,
Dr. J. W. Muir, Las Vegas.

Election of officers followed, resulting in the election of:

President-Elect: Dr. C. W. Gerber, Las Cruces,
Vice-President: Dr. George W. Jones, Clovis,
Secretary-Treasurer: Dr. L. B. Cohenour, Albuquerque (re-elected).

Councillor for two years to fill unexpired term of Dr. Joyner, deceased: Dr. R. L. Bradley, Roswell,

Councillor for three years: Dr. Carl Mulky, Albuquerque, Dr. C. A. Miller, Las Cruces,

Delegate for two years, A.M.A.: Dr. H. A. Miller, Clovis,

Alternate: Dr. R. O. Brown, Santa Fe.

Board of Managers, Southwestern Medicine: Dr. A. B. Stewart, Las Vegas,

Dr. J. R. Earp, Santa Fe.

Meeting place, 1935: Albuquerque, N. M.
Adjournment 2:15 p. m.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.
Director New Mexico State Bureau of Public Health.

MARKING TIME.

The most remarkable thing about the sixty-third annual meeting of the American Public Health Association, held in Pasadena September 3 to 6, was the lack of anything remarkable. It seems as though the budget restrictions from which all have suffered have held the noses of public-health workers down to the grindstone of routine and left no opportunity for productive investigation. This may not be too serious if there is to be a public-health recovery; for we are still, in our knowledge of preventive medicine, far ahead of its practical application. In fact our president, Dr. Haven Emerson, abused us soundly for our lack of courage in proclaiming what we know. We say little or nothing of the loss both in health and in wealth which is brought about by fraudulent medicines and unqualified prescription. We are equivocal on the subject of alcohol when we should be uncompromising.

There is nothing new in the lesson that raw milk is unsafe. But this well-established fact was given a new interest by the description of an unusual outbreak of milk poisoning traced with great skill by Drs. Crabtree and Litterer, of the Tennessee State Department of Health, to staphylococci harbored in the udders of two cows. The investigators prepared a toxin from the staphylococci which they administered to themselves. They were thus able to reproduce the characteristic symptoms of the victims of this milk-borne epidemic and to prove conclusively the source of the outbreak. One heard with much sympathy Dr. G. H. Ramsey, director of the division of communicable disease of the New York State Department of Health. In New York an energetic drink-more-milk campaign is being carried on as much in the interest of agriculture as in that of nutrition. Naturally public-health officers are expected to aid. But how, asks Dr. Ramsey, can one do so when the milk is destined to be consumed raw?

Resolutions adopted by the governing council included some of general medical interest. The campaign against congenital syphilis received endorsement. The blood of every pregnant woman should be tested for syphilis and adequate treatment instituted whenever a positive result is reported. Dinitrophenol should not be exploited directly to the lay public but should be distributed only on the prescription of a licensed physician. Literature on home canning should advise the use of the pressure cooker for non-acid foods.

Dr. Walter H. Brown, professor of hygiene at Stanford University, was chosen president-elect. Dr. Brown has just returned from a world tour and expressed enthusiastic admiration for the public-health administration within the British empire. He stressed the rigid professional requirements for British health officers (each must be a licensed physician with at least two years of clinical experience, as well as have a postgraduate degree in public health), and the freedom of administration from the influence of partisan politics.

The convention next year is to be held at Milwaukee, Wisconsin.

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DR. W. R. JAMIESON ..... El Paso

MEDICAL AND SURGICAL ASSOCIATION COMES OF AGE.

In 1913, a number of representative physicians and surgeons of western Texas, New Mexico and Arizona organized the Medical and Surgical Association of the Southwest, using as a nucleus the membership of the Railway Surgeons' Association of the Southwest. Their purpose was to enlarge their field and solidify the medical thought, the medical activities and the medical achievements of the Southwest into a unit, centering around El Paso as the medical center for this district. Into the organization were invited all the qualified practitioners of the Southwest, including those located in northern Mexico.

In 1914 the first annual meeting was held in El Paso and each year since, except 1918, when no meeting was held, this gathering has been the most important event in medical circles in the Southwest.

During these twenty-one years great developments have taken place. We have shared with the balance of the country in the shocks of war, in the delirium of too great prosperity and in the gloom of depression. We have allowed our structure to deteriorate until today we need rehabilitation if the Association is to survive and fulfill its purpose. There is just as great need today for this organization and its worthwhile objectives as there was in 1914. In fact, the need is greater, and if the will to achieve is still living in us, great advancements are possible. We must, however, make such changes as the times demand in our organization, in our methods of work, in our very objectives, if we are to look for progress.

Elsewhere, in this issue, will be found the simple constitution which was adopted in 1916. This has been only slightly modified by amendments which are indicated.

At the meeting of 1933 in El Paso, a committee was appointed to study several problems confronting the Association. Among the matters referred to the committee was the advisability of reorganization and revision of our constitution. The committee will not be ready to make a report on this matter; so the constitution is presented here in order that the members may inform themselves about it and be prepared to offer some definite suggestions for future guidance.

In Arizona, New Mexico and western Texas (west of the Pecos River) there are 1200 doctors, and a population of one million people. The two states of Mexico which immediately border the United States are Sonora and Chihuahua; these have a combined population of 850,000 people, with about 200 doctors. Just south of these are the states of Sinoloa, Durango and Coahuila with a population of a million and a half and more than 300 doctors.

To all of the 1800 doctors of this great Southwest empire this journal will be sent this month. To each of them, also, will go an invitation to participate in the re-organization and firm establishment of the Medical & Surgical Association as the medium of expression for the medical activities of this unified district.

Certainly every active member of the state organizations in Arizona and New Mexico, and

of the El Paso County Society should be active members of this district organization. The dues are small and within the reach of everyone. There can be no reason, except a failure to appreciate the value and purposes of the organization, which will prevent any doctor in the Southwest from joining in the re-organization plans.

At this crucial twenty-first annual meeting, the organization will either take on new life and go on to greater achievements, or it must acknowledge that its day of usefulness is over. The choice between these two paths of progress or apathy will rest with the profession of the Southwest. To the doctor who reads these words, the question is addressed: What will be **your** vote in this matter? The words of a great observer of human nature is pertinent and appplicable,—"He is not **for** us is against us."

THE SOUTHWESTERN PROGRAM

On another page will be found the detailed program of the Annual Meeting and Clinical Conference of the Medical and Surgical Association of the Southwest, which will be held in El Paso on November 22, 23 and 24.

This program should attract the attention and enlist the interest of every doctor in the Southwest. The Program Committee, with Dr. J. J. Gorman as Chariman and the El Paso County Medical Society solidly behind him, have produced a finely balanced series of papers, clinics and discussions, which offer three days of instruction and training seldom, if ever before, duplicated in our annual meeting. No effort has been made to crowd the program with papers; in fact, this was deliberately avoided in fashioning the program. Time is provided for studying the Scientific Exhibits and for the Round Table Discussions, features of this meeting which will be especially valuable.

This year's program is essentially a **teaching conference**, focused upon El Paso as a medical center for clinical material. Eminent teachers will use the material furnished by the El Paso County Medical Society for clinics and discussions. In the Round Table Discussions small groups interested in special subjects will have opportunity to confer and discuss their problems.

The Scientific Exhibit will be unique. Under the direction of Dr. L. O. Dutton, an imposing array of teaching exhibits have been secured. These alone will be worth the trip to El Paso. To these will be added the local exhibits from the El Paso County Medical Society, so that the variety and excellence of this portion of the program has never before been approached in any meeting held in the Southwest district.

The evolution of medical meetings has been definitely away from the usual jumble of unrelated papers to a program of clinical teaching by diagnostic conferences, scientific exhibits and papers which will integrate with both. The Southwestern meeting offers such a program this year.

CONSTITUTION

ARTICLE I.

NAME

Sec. 1. The name of this Association shall be "The Medical and Surgical Association of the Southwest.

ARTICLE II.

OBJECTS

Sec. 1. The objects of this Association are the advancement of professional knowledge; the systematizing and promotion of better methods of treatment and the furtherance of social intercourse among the members.

ARTICLE III.

MEMBERS

Sec. 1. The members of this Association shall be Active and Honorary.

Sec 2. The active members shall consist of legally licensed practitioners residing or practicing in the States of New Mexico, Arizona, Texas (western part) and the Republic of Mexico, who shall be members of their state and county societies, where such exist, and such only are entitled to vote and hold office. This provision shall not apply to medical officers of the U. S. P. H. S., Army and Navy or to the practitioners residing in the Republic of Mexico.

Sec. 3. Honorary members may be elected by the active members from physicians or surgeons, who have achieved special distinction in medicine and surgery.

ARTICLE IV.

OFFICERS

Sec. 1. The officers of this Association shall be 1, President; 2, First Vice President; 3, Second Vice President; 4, Secretary and Treasurer.

(Amended by adding President-Elect.)

Sec. 2. The first four officers shall be elected by ballot at the regular annual meeting and shall hold office for one year, or until their successors are elected.

Sec. 3. The Trustees shall be elected by ballot at the first annual meeting after the adoption of this Constitution; one to serve for one year, one for two years, and one for three years, this selection of terms to be determined by lot by the three first elected Trustees and thereafter at each annual

(Continued on page 355)

Medical and Surgical Association of the Southwest

TWENTY-FIRST ANNUAL MEETING and CLINICAL CONFERENCE

NOVEMBER 22, 23 and 24, 1934

GUEST SPEAKERS AND ESSAYISTS

Guest Speakers for General Assembly, Clinics and Round Table Discussians

DR. R. G. LELAND, Director, Bureou of Medical Economics, American Medicol Associotion.....Chicogo
DR. HOLMAN TAYLOR, Secretory, Stote Medicol Associotion of Texos.....Fort Worth
DR. JOHN R. CAULK, Professor of Clinical Genito-Urinory Surgery, Woshington University School of Medicine.....St. Louis
DR. JOHN H. MUSSER, Professor of Internal Medicine, Tulone University of Louisiano School of Medicine.....New Orleons
DR. HARRY L. BAUM, Oto-Loryngologist.....Denver
DR. GEORGE PINESS, Lecturer in Allergy, University of Californio, School of Medicine.....Los Angeles
DR. DUDLEY SMITH, Proctologist.....Son Froncisco
DR. JOHN de J. PEMBERTON, Associote Professor of Surgery, University of Minn. Groduote School Medicine (Moyo Clinic), Rochester

Member Essayists Before General Assembly

DR. FRED R. HARPER, (Internol Medicine).....Tucson
DR. GEORGE GOODRICH, (Surgery).....Phoenix
DR. HARRY LEIGH, (Obstetrics).....El Poso
DR. LESLIE M. SMITH, (Dermotology).....El Poso
DR. J. W. HANNETT (Surgery).....Albuquerque
DR. R. W. MENDELSON, (Internol Medicine).....Albuquerque
DR. W. A. GEKLER, President.....Albuquerque
DR. DAVID M. DAVIS, President-Elect.....Phoenix

PROGRAM

THURSDAY, NOVEMBER 22.

Registrotion ot Headquorters Desk in Hotel Hussmon, from eight to ten o'clock in forenoon.

A Registrotion Fee of $3.00 will be chorged oll members and other physicions from Arizono, New Mexico, Western Texas and Old Mexico. No registration fee will be chorged visiting lodies or doctors not residing in the Southwest district.

SESSION ON MEDICAL ECONOMICS

10:00 a.m. Opening Address: **"Medical Ecanamics,"** Dr. W. A. Gekler, President, Medicol ond Surgical Associotion of the Southwest.
10:45 a.m. **"Current Problems in Medical Ecanamics,"** Dr. R. G. Lelond
11:30 o.m. **"Special Phases af Medical Ecanamics,"** Dr. Holmon Toylor
12:30 p.m. Luncheon.

Round Table Discussion

"Mechonism of Joundice".....Dr. J. H. Musser
"The Ureter".....Dr. J. R. Coulk
"The Allergic Nose and Throot os Encountered by the Oto-Loryngologist ond Internist.....Dr. Geo. Piness
"Hyperporothyroidism".....Dr. John de J. Pemberton

AFTERNOON GENERAL SESSION

2:15 p.m. **"Borderline Medical and Surgical Conditians,"**.....Dr. John H. Musser
3:00 p.m. **"Transurethral Surgery"**.....Dr. John R. Coulk
3:45 p.m. **"Surgery af the Biliary Tract"**.....Dr. George Goodrich

Thursdoy Evening—Borbecue.

FRIDAY, NOVEMBER 23.

CLINICS

8:00 a.m. **"Syphilitic Heort Diseose"**.....Dr. J. H. Husser
"Urology".....Dr. J. R. Caulk

9:00 a.m. **"Plostic Surgery"** (Lantern Slide and Clinical Demanstratian).....Dr. H. L. Baum
"Allergic Conditions in Children".....Dr. Geargе Piness

GENERAL SESSION

10:15 a.m. **"The Problems in Diognosis of Gostro-Intestinol Allergy"**.....Dr. Geargе Piness

11:00 a.m. **"Advonces in the Diognosis ond Treotment of the Thyroid Glond"**.....Dr. Jahn de J. Pembertan

11:45 a.m. **"Amebiosis"**.....Dr. R. W. Mendelsan

12:30 p.m. Luncheon.

Round Toble Discussions

General Discussions—
Surgery.....Dr. John de J. Pembertan
Medical.....Dr. J. H. Musser
Ota-Laryngalagy.....Dr. H. L. Baum
Uralagy.....Dr. Jahn R. Caulk

GENERAL SESSION

2:15 p.m. "Title ta be announced".....Dr. J. W. Hannett

3:00 p.m. **"Voriotions of Functionol ond Minerol Metobolism in Pregnoncy ond the Clinicol Importonce to Obstetricol Monogement"**.....Dr. Harry Leigh

3:45 p.m. **"Concer of the Rectum ond Recto-Sigmoid"**.....Dr. Dudley Smith

Friday Evening—Dinner Dance.

SATURDAY, NOVEMBER 23.

DIAGNOSTIC CLINICS

8:00 a.m. **"Conditions Associoted with Splenomegoly,"** Dr. J. H. Musser

8:45 a.m. **"Diseoses of the Spleen Amenoble to Surgery"**.....Dr. John de J. Pemberton

9:30 a.m. **"Diognosis ond Treotment of Common Rectol Disorders"**.....Dr. Dudley Smith

GENERAL SESSION

10:15 a.m. **"Lymphopothio Venereo"**.....Dr. Leslie M. Smith

11:00 a.m. **"Loryngo-Trocheo-Bronchitis"**.....Dr. H. L. Baum

11:45 a.m. **"The Development ond Healing of Peptic Ulcers,"** (Experimental Studies).....Dr. Fred R. Harper

12:30 p.m. Luncheon.
Closing Address.....Dr. David M. Davis

42:00 p.m. General Business Meeting of the Assaciatian.
Reparts af Cammittees.
Electian af Officers.
Selection of Meeting Place for 1935.

ENTERTAINMENT

The full details af the sacial entertainment cannat be given at this time. Special features of entertainment far the visiting ladies will be in charge af the Ladies' Auxiliary af the El Pasa Caunty Medical Saciety. A barbecue on Thursday, Nav. 22nd, and the Dinner-Dance an Friday evening, Nov. 23, will be special features. Galf privileges an the fine new course of the El Pasa Cauntry Club will be available. Details af these features will be given at the time of registration.

SCIENTIFIC EXHIBITS

Direction of Dr. L. O. Dutton

(Incamplete list)

1. William P. Murphy, Peter Bent Brighom Haspital, Bostan:
   "Theropeutic Effect af Intramuscular Injectians af Liver Extroct." Two reel matian picture an Perniciaus Anemia.

2. E. C. Homblen and Robert A. Rass, Deportment af Obstetrics ond Gynecalogy, Duke Hospital, Durhom, N. C.:
   "Studies af Endometrial and Ovorian Responses in Women ta Extrocts of Pregnancy Urine."

3. Alon R. Maritz, Deportment af Pathology, Western Reserve University Schoal af Medicine, Cleveland:
   "Ovarian Tumars." Translucent Photogrophs af Grass ond Microscopic Pothalogy.

4. L. W. Diggs, Deportment af Pathology, University af Tennessee, Memphis, Tenn.:
   "Sickle Cell Anemia," Clinical Features, Pathalagy, Hematalogy, etc.

5. Manfred Kroemer and Maurice Asher, Nework, N. J.:
   "The Diagnosis of Amebiasis by the Pratasigmaidascapic Method."

6. Chorles N. Pease, Children's Memarial Hospital, Chicogo, Illinois:
   "Injuries to the Vertebrae and Intervertebral Discs, Following Lumbar Puncture."

7. G. Allen Robinson, New Yark.:
   "Differentiol Diagnosis of Tumors of the Neck."

8. R. L. McIntosh and M. E. Diemer, University of Wisconsin:
   "Delochrome Prints of Dermatalagical Diseases."

9. E. V. N. Allen and Jahn D. Camp, Maya Faundatian for Medicol Education and Research, Rachester, Minn.:
   "Raentgenograms Made Fallawing Injection of Radiopaque Substance Into the Peripherol Arteries of the Living Subject.

10. Army Medicol Museum, Washingtan, D. C.:
    Amebiosis, Porsitology ond Pathalagy."

11. Nelsan Paul Andersan and Samuel Ayres, Jr., Las Angeles, Cal.:
    "Allergic Dermotoses."

12. J. Rase Veal and Urban Maes, Department af Surgery, Lauisiana State University, Medical Center, New Orleans:
    "Arteriagraphy with Thorium Diaxide Solution in Peripherol Vascular Diseose.

13. Louis I. Dublin, Metropoliton Life Insurance Campany, New York:
    Progress in Public Health since 1900."

14. Henry A. Hafsky, Max Einharn Gastra-Enteralagicol Clinic, Lenax Hill Haspital, New Yark.
    "Stomach Lovage Microscapy as o Diagnostic Aid in Biliory Troct Disease."

15. Fronk van der Bogert, Deportment of Pediatrics, Ellis Hospital, Schenectady, N. Y.:
    "Models of Infant Stools Showing Effect of Vorious Types af Feeding."

16. Vilroy P. Blair and J. B. Brawn, Department of Surgery, Woshington University Schaal of Medicine, St. Louis.
    "Photogrophs and Drawings an the Treatment af Full Thickness Skin Losses Resulting fram Burns."

27. Herbert S. Reichle, Haword T. Karsner ond Thamas T. Frost, Institute of Pathalagy, Western Reserve University Schaol af Medicine, Cleveland, Ohia:
    "Transilluminated Phatagrophs of Typicol Forms of Tuberculous Pulmonary Diseose."

ARIZONA STATE MEDICAL ASSOCIATION

Report of the President 1933-1934 Woman's Auxiliary

Much progress has been made this year toward a more definite goal in Medical Auxiliary work. While not fully satisfied with the year's accomplishments, yet a foundation has been laid and many strides taken toward a real functioning Auxiliary. The following activities will give some idea of the work done during the past year:

Over 100 letters 16 post cards and nine packages received.

There have been sent out 116 letters, 97 letters on cards, seven packages, four telegrams and 13 long distance telephone calls.

One joint Board and bi-county meeting and six Executive Board meetings held.

Six Auxiliary county meetings visited.

One other county visit arranged, but cancelled because of illness.

The first State Medical Auxiliary stationery purchased.

Had two Arizona representatives at the National Medical Auxiliary convention in Milwaukee.

Appointed a state historian who is compiling the history of the state organization.

Published seven articles in Southwestern Medicine.

Purchased our own state scrap book to be sent to the National convention in Cleveland.

Appointed our first Archives chairman.

Entertained the National Auxiliary president.

Inaugurated morning sessions at this state meeting.

Broadened our public relations work.

Exceeded our quota of Hygeia subscriptions.

Responded to the first call upon the State Auxliiary, as a unit, to assist the Medical Association in solving one of their serious problems. I refer to the referendum on the Basic Science Act.

If the results of the work which has been attempted meet with your approval, I shall be satisfied. For the valuable cooperation, loyalty and support received from the officers, chairmen of committees, county presidents, secretaries, committee chairmen and members, and for the delightful personal friendly relations resulting, the deepest and most appreciative gratitude exists. They were a great joy to me in the year's work.

As one can only realize through experience, a member at large is at a great disadvantage, far removed from the centers of the Auxiliary work. At no time, however, was there anything but willing response to requests to the different branches of this organization; the state and county reports came in very promptly.

Some of the county auxiliaries have not thus far promoted an educational program, but if present plans are carried out, this part of the Auxiliary work will be added soon. We must remember, however, that it was because of the pleasant social relationships the first auxiliaries were formed. The social part of our activities is a most important one, although other functions have been added to make the Auxiliary a most valuable adjunct to the Medical Association. Let us continue to make the work of the Auxiliary so interesting that the wife of each physician in Arizona will wish to become a member. Let us keep in mind this thought—

"We are builders, and builders we must ever be;
Builders not in stone that shelters life, but
Builders in life itself;
Ever remembering that the future of the world
for generations to come,
Depends upon what we think, and will, and do
today."

MRS. C. R. SWACKHAMER,
President, 1933-1934.

Const'tution

(Continued from page 351)

meeting one Trustee shall be elected to serve three years.

(Amended so that the retiring president automatically becomes a member of the board, which is made up of the last three ex-presidents.)

ARTICLE V.
MEETINGS.

Sec. 1. The regnlar annual meeting shall be held at such time as may be decided upon by the President and Trustees, due and sufficient notice being given all members in advance. The place of meeting shall be determined by vote at each annual meeting of the association.

Sec. 2. Special meeting may be called by the President and Trustees, or by the written request of ten members, provided that in the notice of such meetings, which must be sent to all members, the special order of business and the need thereof must be stated.

ARTICLE VI.
AMENDMENTS.

Sec. 1. Amendments to this Constitution must be presented in writing at one annual meeting and be laid over to the next annual meeting, when after specific notice of the proposed change has been given to all members, a two-thirds vote of all members present shall be necessary for adoption.

By-Laws

ARTICLE I.
DUTIES OF OFFICERS

Sec. 1. The terms of elected officers shall begin at the close of the meeting at which they are elected.

Sec. 2. President.—The President shall preside at all meetings, be ex-officio member of all committees, unless otherwise provided for, and shall perform all the duties incident to that office and must at the close of his term of office deliver an an address.

(Amended at the 1931 meeting as follows: "There shall be a president-elect who shall take office at the evening meeting of the first day of the regular annual meeting. The president shall hold office until he delivers his address as retiring president, following which the president-elect shall be inducted into office and deliver the president's address.")

Sec. 3. Vice President.—The Vice Presidents shall in the proper order perform all the duties of the President in his absence.

Sec. 4. Secretary and Treasurer.—The Secretary

and Treasurer shall keep a correct record of all proceedings; keep a complete list of members; have charge of all books, papers and other documents of the Association and shall conduct all correspondence, including notices to members. He shall collect all dues, keeping a correct account of the same; and must render at the annual meetings a detailed report of all receipts and expenditures, handing over to his successors all money and property in his possession belonging to the Association, taking a receipt for the same.

Sec. 5. The Trustees shall be the advisors of the other officers; shall act as Auditing Committee and shall be the Committee on Publication. They shall investigate and report on petitions of active members before the same can be acted upon by the Association.

Sec. 6. The Trustees shall also investigate any rumors or charges of unprofessional conduct on the part of any members, or any violations of the Constitutions and By-Laws of this Association, and if in their unanimous opinion shall deem the charges or violations well founded, may suspend such member from all privileges of the Association, until the next meeting either regular or special, making thereat a report of their action which shall be thoroughly considered by the Association, and if their action be sustained by a two-thirds vote, of all members present, a penalty shall be inflicted the severity of the same to be decided by the Association.

ARTICLE II.

ELECTIONS OF MEMBERS.

Sec. 1. The petitions of proposed active members shall be sent to the Secretary, giving name in full, age, residence, college and year of graduation, year of issuance of state license, together with such other information as may be deemed necessary. These petitions shall be transmitted to the Trustees by him, who shall report the same with their recommendations to the Association, and a vote of two-thirds of those present shall be necessary to elect.

(This procedure has been modified by custom so that applications of members in good standing of the state or county associations have been accepted without further formality.

Sec. 2. Honorary members must be nominated at the annual meeting and acted upon by the Association at large, and shall require a two-thirds vote of those present to elect.

ARTICLE III.

DUES.

Sec. 1. The dues of this Association shall be $2.00 per annum and special assessments may be levied by the Association to cover extraordinary expenses. One-half of the annual dues may go to the Publication Committee to defray expenses of publishing papers and proceedings in the official organ of the Association with the approval of the Board of Trustees.

(The dues were later increased to $3.00; then raised to $5.00 in 1930, and reduced to $3.00 again in 1934. Also the Publication Committee was authorized to turn over to Southwestern Medicine $2.00 from each member to defray the expenses of publishing their proceedings and papers read before the Association.)

ARTICLE IV.

MISCELLANEOUS.

Sec. 1. Three members from each of the States of New Mexico, Arizona, and Texas, with the President or his representative shall constitute a quorum for the transaction of business.

Sec. 2. All papers read before the Association shall become its property.

Sec. 3. Any active member may invite a professional friend to the regular meetings, unless the character of the business to be transacted or the concensus of the active members shall suspend this courtesy, of which action notice must be given.

Section 4. Robert's Rules of Order shall govern all proceedings, unless otherwise provided for.

ARTICLE V.

ORDER OF BUSINESS.

Sec. 1. The following shall be the order of business: 1, Roll call; 2, Reading of minutes of the previous meeting; 3, President's address; 4, Report of Secretary and Treasurer; 5, Report of Trustees; 6, Election of members; 7, Report of standing committees; 8, Report of special committees; 9, Reading of papers and scientific matters, with discussion thereon; 10, Election of officers; 11, Selection of place of meeting; 12 Miscellaneous business.

ARTICLE IV.

AMENDMENTS.

Sec. 1. These By-laws may be amended or suspended at any meeting by resolution and a two-thirds vote of those present, provided said amendments or suspensions are not in violation of the Constitution.

Medical Men for Things Medical

"The principle that medical men should be the ones to exercise control over medical service is almost exiomatic. Yet there is confusion of thought where there could be straight thinking if all the facts were brought out and faced.

"There are those who would virtually make the physician an employee of the state. They fail to recognize the utter incompatibility between the American political system and the methods of truly professional men.

"There are those who complain about the scarcity of physicians. Yet it is a fact that while England has one doctor for 1,490 persons, France one for 1,690, and Sweden one for 2,890, there is in the United States one physician for every 780 persons.

"There are those who denounce our hospitals on the score of high charges for service, but the truth is that the cost per day of a hospital room with meals and the day and night personal minisrtations required by an invalid is usually less than a well person would pay for mere room and meals in a first-class hotel.

"There are those who would like to let down the bars to self-medication. Yet the fact is that during the last few generations the average span of human life has been extended ten years, chiefly through the discoveries of medical science.

"Physicians know these things. They spend years acquiring an education on the care and repair of the most marvelous mechanism on earth—the human body. But they would readily admit that this education does not qualify them for telling railroad executives how to solve transportaiton problems or impressarios how to stage an opera. The work of the world needs many kinds of specialized knowledge, but certain it is that each field of work will be best managed by those who know it best."—from Mead Johnson & Company's announcement in Hygeia, August, 1934.

Resolution on Medical Economics

(Presented by the Santa Cruz County Medical Society, and referred to the Committee on Economics of the Association.)

In view of the attrition of private medical practice:

1. By competition with contract practice, industrial practice, hospital insurance, university practice, county hospital practice, lodge practice, group clinics, free clinics, army and other government medical officers;

2. By elimination by the profession itself of formerly remunerative practice in plagues and contagious diseases such as bubonic, typhoid, diphtheria, and so forth;

3. By the lack of adequate compensation in traumatic surgery, due to insurance and workmen's compensation interference, in one of the fewer lines of increased activity;

4. By the usurpation of various public health services, such as vaccination, surveys by public health organizations, school nurses, and other agencies, and so forth;

5. By the rapid decline in the national birth rate;

6. By the over-crowding of the profession as shown in the report of the Committee on Medical Education, being relatively two to three times more crowded than any other nation.

And being convinced of the inevitability of state medicine, health insurance or whatever may be the name of an adequate comprehensive medical service for all the people;

Therefore, we, the Santa Cruz County Medical Society, RESOLVE: That the Arizona State Medical Association and American Medical Association be urged to consider, prepare and publish such comprehensive plans as may result to the best of the whole medical profession, as well as the nation.

SANTA CRUZ MEDICAL SOCIETY,
By Chas. S. Smith, President.

(Note: The argument which accompained this Resolution contains several items which are in line with the investigations now being conducted by the Committee on Economics, so the whole matter was referred to them for their consideration and future report).

THE MICHIGAN STATE MEDICAL SOCIETY ANNOUNCES

The retirement of its Secretary, Doctor F. C. Warnshuis, effective September 15th, 1934. Doctor Warnshuis is leaving Michigan to assume the duties of Secretary-Treasurer of the California Medical Association on October 1st, 1934.

On and after September 1, 1934, all communications related to Society affairs, business, advertising and exchanges should be addressed to

Burton R. Corbus, M. D.
Acting Secretary,
313 Metz Building,
Grand Rapids, Michigan.

On and after October 1, 1934, Doctor F. C. Warnshuis's address will be Room 2004 450 Sutter Street, San Francisco, California.

G. L. LeFEVRE, President.
B. R. CORBUS, Chairman.

WANTED — By Nurse-stenographer, position in physician's office or hospital historian. References. Address Box R. N. Southwestern Medicine.

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CRUM EPLER, M. D.
Superintendent

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A. D. Long, M. D.
Medical Director

Medical and Surgical Association of the Southwest

I hereby make application for membership in THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST, and, if elected, agree to abide by its constitution and by-laws.

1. I was born at..... on the.....

   day of....., 19.....

2. I graduated in medicine from.....
   Give name of college in full

   on the.....day of....., 19.....

3. My State Certificate was issued .....
   Give Date of State License

4. I am a member of the following Medical Societies:.....

   .....

   .....

   .....

5. I have practiced at my present location..... years, and at the following places for the years named:

   .....

   .....

   .....

6. I am .....
   State "General Practitioner" or Specialty, if any

7. My office is at.....

Respectfully,

Name .....
Give Name in full

P. O. .....

County..... State.....

Fill out and return to W. Warner Watkins, M. D., Secy., 507 Professional Bldg., Phoenix, Arizona.

(Dues will be $3.00 a year but DO NOT send remittance with this application.)

One of a series of advertisements prepared and published by PARKE, DAVIS & CO. in behalf of the medical profession. This "See Your Doctor" campaign is running in the *Saturday Evening Post* and other leading magazines.

YOU DON'T BELIEVE IN DOCTORS?

"I'm too busy to go to the doctor. And I haven't much faith in doctors anyway."

Every once in a while you hear a person make such a statement—perhaps you have yourself. Does it make sense? Let's see—let's look at life as it used to be and life as it is today . . .

A little over a century ago, smallpox was the rule rather than the rarity—in fact, a case is recorded in which a criminal was identified by the fact that his skin was unblemished by pockmarks!

Today, thanks to vaccination, smallpox has almost completely disappeared. A doctor discovered vaccination—every doctor now offers its protection.

Up until the middle of the 19th Century, a surgical operation was a horrible ordeal. The comforting oblivion of anesthesia was not known, and the lack of proper antiseptics made even the simplest operation an unequal gamble with death.

Today, surgery is so efficient, so advanced, so much a part of nearly everyone's experience, that we take even downright miracles as a matter of course.

Twelve years ago, diabetes was a virtual sentence to death. *Today, doctors can give most diabetics a normal span of life.* Just a few years ago, pernicious anemia was hopeless. *Today, it can be fully controlled.*

Kidney disorders, childbirth, asthma, goiter—the terror of all of them has been lessened by miracles that modern medical science has wrought.

The discovery and application of vitamins have almost eliminated rickets and scurvy . . . and deserve much of the credit for the sturdy legs and healthy bodies of our children. Yet at the beginning of this Century, the word "vitamin" wasn't even in the dictionary.

Many diseases that were shrouded in mystery even as late as 30 years ago, are an open book to the doctor of today. Syphilis, whooping cough, scarlet fever—the causes of all have been discovered since 1900. And that means in most instances, also a method of control.

Medicine is a living thing, constantly growing, constantly developing, constantly moving forward. And the one person who can place this knowledge at your disposal is *your doctor.*

The men and women that comprise the medical profession spend years of preparation in learning to become doctors . . . and they keep in touch with medical progress through clinics, hospitals, medical societies, medical journals, medical conventions, and other agencies which help disseminate this precious knowledge.

It is a sensible thing to call upon your doctor frequently enough to *preserve* health as well as to *restore* health. Faith in your doctor, and intelligent recourse to the knowledge he offers, might mean the difference between a bed of pain and continued good health—between a premature death, and a pleasant and useful "threescore and ten."

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Vol. XVIII. NOVEMBER, 1934 No. 11

OFFICIAL ORGAN
of the
NEW MEXICO MEDICAL SOCIETY
ARIZONA STATE MEDICAL ASSOCIATION
EL PASO COUNTY (TEXAS) MEDICAL SOCIETY
THE MEDICAL AND SURGICAL ASSOCIATION
OF THE SOUTHWEST

FOR TABLE OF CONTENTS—SEE ADVERTISING SECTION PAGE 1

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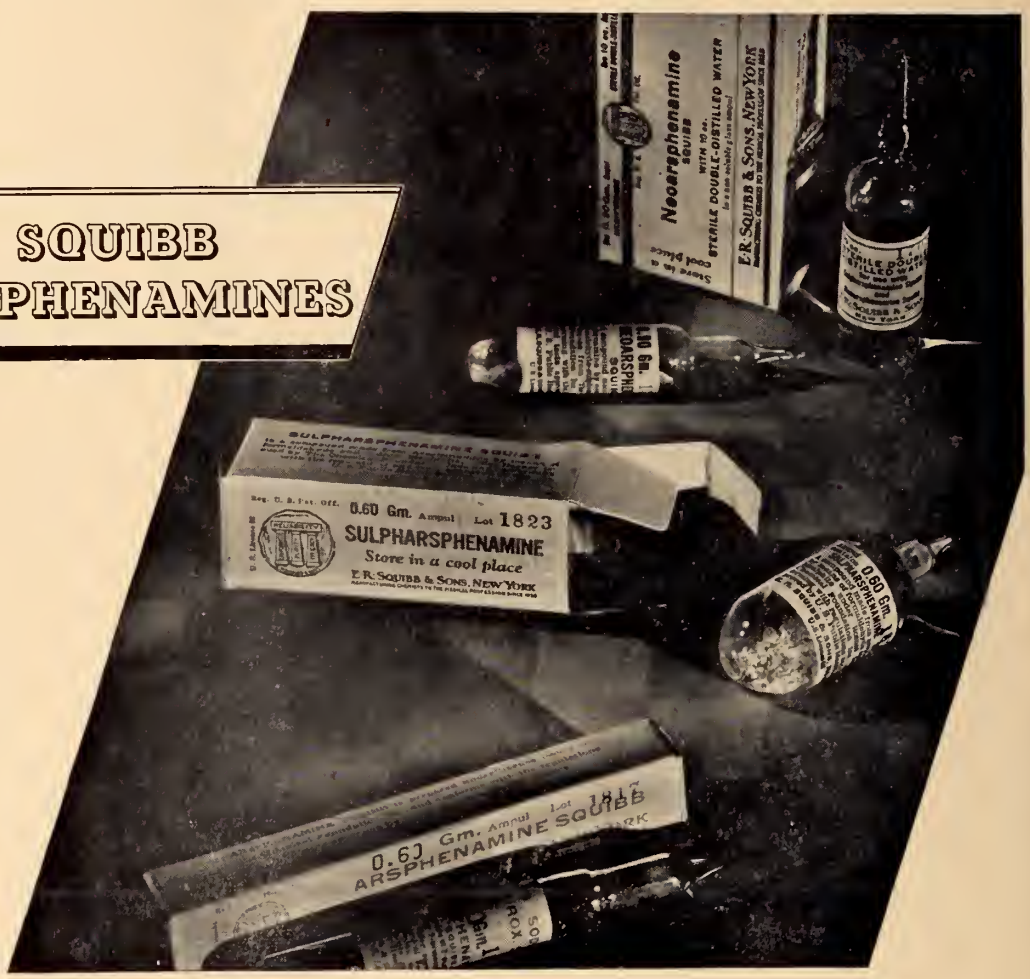

SIR WILLIAM OSLER has well said, "Know syphilis in all its manifestations and relations and all other things clinical will be added unto you." The many insidious, destructive forms which syphilis takes in its later stages points to the necessity for early diagnosis and persistently continuous treatment. It is generally agreed that that treatment is most effective which is based on an adequate program of arsphenamine administration supplemented by a heavy metal in an effective form of which Iodobismitol is an example.

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ARSPHENAMINE SQUIBB for intravenous injection after neutralization with sodium hydroxide. Readily soluble in distilled water at room temperature. Marketed in 0.1, 0.2, 0.3, 0.4, 0.5 and 0.6 Gm. ampuls.

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EL PASO COUNTY (TEXAS) MEDICAL SOCIETY

THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST

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COMMON SENSE ABOUT MEDICAL ETHICS

M. I. LEFF, M. D.

Glendale, Arizona

(Read before the Arizona State Medical Association, at its Forty-third Annual Meeting, held at Prescott, June 7 to 9, 1934).

We are living in a most interesting age. Everything is changing before our very eyes. Within our lifetime the world around us has undergone such a remarkable transformation that it is hardly to be recognized as the world of our childhood. And this metamorphosis in the physical environment has produced even more profound changes in the world of ideas. No longer do we bow our heads to authority and accept the opinions of moral teachers as final. Our ethical concepts and spiritual values have been subjected to a thorough-going revision and a sweeping revaluation by the same scientific method by which more material problems are solved and with which our age will be identified. And what is this scientific method? Let scientist R. A. Millikan answer:

"The Scientific Method consists in not starting at all with **a priori** postulates about the nature of reality, or with any complete philosophic system, such as all the philosophers of the ancient world, idealists and atomists alike, had started with, and indeed quarreled interminably over; in discarding likewise all intuitive axioms on the one hand and authority on the other such as had been the foundation of the medieval scholasticism. (Quarterly magazine, Science, Religion & Philosophy. Summer Number, 1931)."

Using this same method medicine was able to keep pace with the general advance in art and science. Though we have not yet succeeded in converting our profession into an exact science, we have been making great strides towards that ideal.

Not so in our system of ethics. In this important field we have been content to rely upon authority in disregard of the scientific method. Thus our modern sophisticated young medicos are made to swear that they will obey antiquated ethical concepts in the name of Aesculapius and a collection of other gods and goddesses that had been definitely laid to rest more than fourteen centuries ago. And our Twentieth Century Medical Code is built upon principles evolved by men who had only a vague conception of scientific medicine; none at all of the complexities of modern life.

Now the mere fact that the Code is old does not necessarily invalidate it. If our system works or is workable, we do not have to change it just so that we may be in tune with the changing world. But does it work? It is the purpose of this paper to look into our Code of Ethics, to examine its precepts and compare them with the conduct of the majority of the members of our profession, and, if found contradictory, to attempt a revaluation of these principles in harmony with the requirements of modern life.

But let me first warn the timid souls in our midst that during our excursion in this neglected field we are liable to stumble on a number of hidden facts which many would prefer not to uncover. To gaze upon them in their true form might hurt the susceptibilities of some esthetes among us. This consideration, however, should not deter us from our goal. A group of men engaged in the gentle art of prescribing all kinds of nauseating stuff for others cannot with propriety decline a sip of bitter medicine themselves once in a while.

The terms "ethics" and "morals" are synonymous, and are derived from the Greek and Latin words **ethos** and **mores** respectively. Originally these words meant custom, usage. He was moral or ethical who followed the customs of his neighbors. A non-conformist was

immoral. Later the words were given a more restricted meaning. Only such customs whose performance entailed more or less of a sacrifice on the part of the performer could be designated as ethical. A still later development restricted the scope of ethics still more. For an act to be moral it must be of some benefit to a second party in addition to the certain degree of self-sacrifice on the part of the party of the first part. Thus a man sitting down to dinner attired in a full dress suit in a hot summer's night may be quite uncomfortable but not necessarily ethical.

Ethics are not always and everywhere the same. They change with changes in general or local conditions. Some of them are dropped, others are enacted into law. Most moral concepts, however, have become quite stable and their acceptance or rejection on the part of any individual is still more or less voluntary.

The motive that induces people to be ethical against their natural inclinations is either fear of punishment or hope for reward. The punishment may be hell fire or public censure; the reward, heavenly bliss or earthly favors. There are said to be some individuals who are moral for apparently no such selfish reasons. If so, they are the exceptions that prove the rule. Moreover, modern matter-of-fact psychologists tell us that even these exceptions are not really so disinterested as they may appear to the bystander, or even to their own conscious selves.

In addition to general rules of ethics certain groups have from time immemorial adopted special ethical codes for the guidance of the members of their brotherhoods. These organizations may be religious or secular. Examples of the first are the various religious orders; of the second, the Russian Communist party. These special codes are more stringent and demand a greater degree of self-sacrifice of the votary than do the ethics of the general public. Membership in such organizations being voluntary, the initiated is expected to adhere strictly to the rules or quit the fraternity. While we expect every citizen to act ethically, if he fails we do not generally condemn him. An ordinary mortal may be unethical and still be admitted as a good fellow. But one who makes a claim to a special ethical conduct must either live up to his claim or be branded an Elmer Gantry. The world hates a hypocrite.

The learned professions also elaborated special codes of conduct. The medical profession, being one of the oldest, can boast of one of the oldest ethical codes—how old, is as yet unknown. For a long time it had been accepted that Hippocrates was the ethical law-giver. But the Ebers Papyrus revealed that the Egyptians preached ethics as well as practised medicine a thousand years before the birth of the Father of Medicine. Nor can the Egyptian priest-doctors be regarded as the founders of medical ethics. We find some form of medical ethics among the practitioners of the most primitive tribes. And how could it be otherwise? If disease is caused by supernatural beings, the doctor who undertakes to propitiate or cajole those powers must himself be a kind of a demigod, and would naturally behave differently from ordinary mortals. In our age, when the divine theory of disease has been replaced by the germ theory, and when medicine has definitely parted company with theology, the doctor is no longer expected to possess a special pull with the Almighty. But, though we have discarded the high hat and the swallowtail suit as a concession to modernism, we still retain a feeling that in some way we are different from the rest of humanity. Accordingly, we still do lip service to a code of ethics which came down to us from the good old days when medicine men really were different.

Our Principles of Medical Ethics was erected by the A. M. A. upon the foundation of the code of Hippocrates, in 1847. Here are some of the high lights of the Principles:

Sec.1. A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration.

Chap. II, Art. 1, Sec. 1. The obligation assumed on entering the profession requires the physician to comport himself as a gentleman and demands that he use every honorable means to uphold the dignity and honor of his vocation, to exalt its standards and to extend its sphere of usefulness.

Sec. 2. A physician must keep himself pure in character and conform to a high standard of morals — he should also be modest, sober, patient, prompt to do his whole duty without anxiety, pious without going so far as superstition, conducting himself with propriety in his profession and in all actions of his life.

Sec. 7. Physicians should expose without fear or favor, before the proper medical or legal tribunals, corrupt or dishonest conduct of members of the profession.

Art. VI. Sec. 1. The poverty of a patient . . .

should command the gratuitous services of a physician.

Chap. III, Sec 1. Physicians, as good citizens, and because their professional training specially qualifies them to render this service, should give advice concerning public health of the community.

Sec. 2. When an epidemic prevails, a physician must continue his labors for the alleviation of suffering people, without regard to the risk to his own health or life, or to financial return.

Sec. 3. Physicians should warn the public against the devices practiced and the false pretensions made by charlatans which may cause injury to health and loss of life.

Conclusion . . . . Finally, these principles are primarily for the good of the public.

To sum up: We doctors are dedicated to the service of humanity. To exert ourselves to the utmost for our patients' welfare is not enough. We are obligated to safeguard the health of the community as a whole. In times of stress we, like police officers or firemen, must stick to our posts even at the risk of our very lives. But, unlike those public servants, we are not to condition our services by monetary reward. In addition to the purely medical work, for which were trained, we must also assume the duties of the judiciary and help bring to justice corrupt doctors. As for our private lives, we are to compete with the reverend clergy in the austerity of our mode of living.

We cannot help admiring this wonderful code. It surely does credit to the wonderful men who live up to it, men who, caring absolutely nothing about themselves, have consecrated their lives to the good of mankind. The question is, only, what has such a code to do with our Twentieth Century medical profession? To be sure, there are some moral giants among us who can, and do, live up to these sublime principles. But that is not on account of their being doctors, but because they are supermen. Whether due to heredity, environment, or the activity of the endocrine glands, some individuals are made of a finer texture than the rest of the herd. You will find them in variable grades of perfection in every profession and walk of life. And I am reliably informed that an honest man may be found even among Los Angeles realtors, if you look hard enough. As for the rank and file of the medical profession, they behave as any other group of men would under similar conditions.

So, let us stop patting ourselves on our backs, like lunch-club members, and repeating the long-since-exploded assertion that we are altruists. We are not. For it is only reasonable to ask how and when did we get that way? We know how the members of the other learned profession, the clerical, got that way: they heard the Call and responded to it. But we took up medicine, not as a calling but as a career. The astounding declaration of our code that a profession has for its prime object the service it can render to humanity, is simply not so. A profession is defined by Webster as "that of which one professes knowledge," and by the Standard Dictionary as "an occupation that properly involves a liberal education or its equivalent, and mental rather than manual labor." Moreover, nothing was said to us about the primary and secondary objects of our prospective profession at matriculation. Accordingly, when we burned midnight oil over Gray's Anatomy in preference to engaging in some more joyful pursuits, it was not because we had been fired by the great and glorious expectation of helping suffering humanity, but rather by the less noble but more practical vision of social and financial advantages. It was also during our student days that we became aware of the uninspiring fact that even among medical faculty members ability and character alone do not always receive proper recognition.

After four years of hard labor we are given our degrees and sent out into the world to administer to the sick with all the rights and privileges enjoyed by the rest of the fraternity. And here we get another illuminating lesson of the value of our principles. For the profession to permit recent graduates with hardly any practical training to treat all kinds of ailments as full-fledged physicians and surgeons, does not demonstrate much concern for the welfare of humanity. The less scrupulous are quick enough to learn that important lesson, and, if they do not expect to make profitable connections through a hospital training, hang out their shingles and are ready at once to serve humanity for a price. The more able among these business men do attain some degree of efficiency through a long process of trial and error upon their unsuspecting victims. The less gifted ones remain medical cripples for life. For lack of training, and not for any particular scruples, they are compelled to have frequent consultations and to send to specialists a good deal of the work

that the average doctor should know how to handle himself. Thus may be explained the fondness of some efficient doctors for these incompetents.

The more conscientious graduates, refusing to take advantage of the innocent patients, seek to complete their training in hospitals. And what do they get for their pains? It is not an exaggeration to state that no other set of civilized men are compelled to stand as much abuse as internes in some large hospitals. Many superintendents look upon internes as inferiors, to be kept in their places by strict military discipline. To save the small expense of an extra man, the number of internes is limited to a minimum. The members of the average medical staff have no time for finding out how their slaves are faring. Instead of protecting the interest of their young brothers, who incidentally work for them for nothing, they usually bow down to the wishes of the hospital authorities and pile work on the inadequate number of internes without regard for the limit of human endurance. And woe unto the poor interne who, out of sheer exhaustion, lets a retractor slip from his hand during an operation. He is liable to be rebuked by the surgeon in the presence of everybody. And the same great man is very proper and patient with the half-baked business doctors who did not bother to take up hospital training, but send him plenty of work. The interne notices that, and, naturally, draws the logical conclusion. The interne also is called upon occasionally to assist at operations for which there are no better indications than the surgeon's need of a fee or experience. Later on, as his acquaintance with the qualifications of the various staff members increases, the interne makes another momentous discovery, and that is, that to obtain appointments and gain advancement on the staff of the hospital, character and erudition are not as important as political pull; that for the lack of such influence, or for not being able to act the part of a flunkey, many an excellent man is kept way down the line, while the higher positions are filled with medical potentates who, despite their make-up, are revealed to the interne's critical eye as so many stuffed shirts.

No, the hospital, with its petty politics and pettier big-men, is decidedly no place where the average interne might be inspired with love of truth and with a zeal for the service of humanity.

When and where, then, does the holy spirit of idealism descend upon us? And what is there in the theory or practice of medicine that will change an ordinary mortal with normal self-centered inclinations into a self-sacrificing saint? Nothing that I can see. On the contrary, by acquiring an intimacy with the human body and its afflictions which to some may breed contempt, a weak character would probably become even less upright than he would have been in another profession.

As for the binding power of the code, the young doctor has not enough evidence of its effectiveness in the conduct of the older brethren. The result is an ugly cynicism and a progressive weakening to temptations in the struggle for existence. Practice makes perfect, and some of us become perfect scoundrels. This may be putting it too strong. But is it? Let us see.

Your car does not work well. The mechanic, whom you trust, makes some elaborate repairs and charges you accordingly. You then discover that the only thing the car really needed was a slight adjustment of the carbureter. What would you think of the mechanic?

Now, when a patient is suffering from a bad cold, with an annoying cough, and his doctor tells him that he has pneumonia (I am referring to an actual case), rushes him to the hospital, puts him to the expense of day and night nurses and then sends the grateful patient a fat bill for saving his life, what shall we think of the doctor?

And how about the surgeon who subjects his patient to the dangers of a laparotomy without definite indications: in fact, even when he knows well that the operation will not accomplish any better results than those which could be obtained from medicinal and dietetic measures? How shall we label such a specimen? And yet, how many thousands of young women have been made miserable for life by unnecessary oophorectomies? And how many humanitarian surgeons are there still at large who even now remove tubes and suspend uteri for purely monetarian reasons? Now, let us go a step further: suppose peritonitis follows the unnecessary operation, or later on

in life the patient comes down with acute obstruction as a result of it, and dies. Is, or is not, the surgeon the murderer?

Or, take the case of the doctor who has been too busy or too lazy to attend medical society meetings, or even to read current medical literature, and hence still treats pulmonary tuberculosis with iodides, and acute abdominal obstruction with heroic doses of castor oil. Isn't that man a killer?

You will say that these ignoramuses and butchers fortunately form only a small percentage of our profession; that by far the great majority of doctors are hard-working, conscientious men who may be mistaken at times, but never dishonest in their diagnosis and treatment. Quite so. But this is not enough, according to our Code:

"Physicians should expose . . . to the proper tribunals corrupt or dishonest conduct of members of the profession." (Sec. 7, Ch. II.)

How many corrupt or dishonest surgeons did we expose to the proper tribunals in the last five years? In the last fifty years?

But let us look into some of the practices of the ethical majority and see whether they are above criticism. Whenever, due to an error of judgment, things go bad with the patient, we comfort ourselves with the well-known observation about medicine not being an exact science, mistakes are inevitable. This would carry more conviction if the majority were in the habit of doing everything possible in order to avoid making a mistake. Can we honsetly maintain that most of us have such laudable habits? Decidedly not.

It is obvious that an upright judge cannot preside over a case in which he has a personal interest. And with all the imperfections of our system of justice, we could not visualize an arrangement whereby the judge is also the sheriff, and, instead of a salary, is paid a commission from the collections he himself makes of fines he himself imposes. And yet this is exactly what our surgeons are constantly doing, with the tacit approval of our Code. In borderline cases, where so much depends upon clear and impartial thinking, how can an honest surgeon trust in his own judgment when the difference between a prescription and an operation means so much to his income, upon which he depends for a living?

Some doctors still pray to the Lord not to lead them into temptation, thereby admitting that unaided by Grace they might succumb. And yet the same pious doctors, even before ascertaining that their prayer was answered, will undertake to decide alone, without any other check than their own judgment, whether a patient suffering from chronic sinusitis should use a spray or be subjected to a radical operation, despite the fact that the difference to the doctor's bank account would be the difference between five dollars and five hundred dollars. But instead of hypothetical questions, let me quote an actual occurrence to show how the judgment of even honorable surgeons may be distorted in such cases.

I was giving ether to a patient on whom a gastro-enterostomy was to be performed for ulcers of the stomach. No ulcers were found in the stomach, and a thorough search failed to show pathology in any other organ of the abdomen. The surgeon and his assistant were above the average in ability and honesty, and I believed them when they assured me that the symptoms were very definitely those of gastric ulcers. To my question: "What was the Wassermann reaction?" I received the astounding reply that they did not deem it necessary to subject the not well-to-do patient to extra laboratory expenses when the diagnosis was so obvious. Being honest men, they readily admitted that in this case their solicitude for the patient's five dollars miscarried, and they felt very much chagrined when the subsequent laboratory test showed a 4-plus Wassermann.

Now, this case deserves some analysis: Here are two able and honest surgeons ready to undertake a very serious operation which would cost the patient several hundred dollars and endanger his life, and yet they omitted a most important step in differential diagnosis in order to save him five dollars. How can we account for such strange economy? "Plainly enough," replies the Freudian, "consciously they were honest men and the mere suggestion that their judgment might have been influenced by monetary considerations would have shocked them profoundly. Unconsciously, however, they wanted the three hundred dollar fee for the gastro-enterostomy badly. A Wassermann test might have endangered the realization of their unconscious desire. The Conscious is for Wassermann and the Un-

conscious is firmly opposed to it. A conflict ensued. For the selfish Unconscious to urge upon the virtuous Conscious the fee as a deciding factor would only serve to defeat its own ends. A more effective method is to diplomatically make use of the mechanism known as Rationalization. And by substituting the lame, but noble, reason (for omitting the Wassermann) of saving the poor patient an added expense of five dollars, for the more sensible though wicked motive, the desire for the bigger fee, the wool is pulled over the eyes of the righteous but not wholly indifferent Conscious, and the three hundred dollars are made safe for the good doctors.

"The unconscious is essentially dynamic and capable of profoundly affecting conscious ideational or emotional life without the individual's being aware of this influence."

(The Structure and Meaning of Psychoanalysis, p. 24. Healy, Bronner and Bowers.)

How then can an honest man safeguard himself and, incidentally, his patient, against the machinations of his unconscious egotism? Very simply. Let him refuse to operate, except in emergencies, without a consultation with an efficient internist. The consultant, whose fee is the same no matter what treatment he recommends, should be able to render a more impartial opinion than the interested surgeon.

Several years ago the writer suggested this plan at a county society meeting, and the scolding he received for it from a leading surgeon of that city convinced him that even leading surgeons would do well not to trust in their self-righteousness too much.

"For a gift does blind the eyes of the wise, and pervert the words of the righteous."

Another county society is accustomed to spend one evening a year in kidding itself with pious sermons on medical ethics. In the course of one such revival meeting a member became inspired, and suggested that, as a check to the haphazard way in which some doctors diagnose and treat their cases, the names of the attending doctors be given when the monthly death list is reviewed at the hospital staff meetings. The reasonableness of such a plan is self-evident. The average doctor will surely be more careful when he knows that, in case of a fatal ending, his work will be scrutinized by the medical fraternity, than when he is certain that, no matter what happens to the patient, his reputation will suffer no harm. Was that sensible suggestion adopted by the society of saints? It was not.

Several months later, during a hospital staff meeting, the achievements of a certain idealist were related, without mentioning his name, of course. Of the seven operations that ended fatally during the preceding month, four were performed by him, and there was much bungling in the diagnosis and management of every one of those four fatal cases. The doctor reviewing that death list, and visibly moved by the record, made a strong appeal that something should be done about it by the staff. The audience was stirred to action, and the old suggestion about naming attendant doctors was dug up and passed unanimously.

Now, why was not that preventive measure adopted before? Is it not terrible to think that some of the dead ones might still be walking this earth had that simple device been adopted earlier? But, at the very next staff meeting, that pious resolution, which had been passed in a moment of righteous indignation, was ignored completely by the same staff, to the great joy of the unscrupulous.

Let us now pass on to another common practice which further illustrates how low some doctors can sink in their greed for easy money and how little the profession exerts itself to protect the interest of humanity or the "dignity and honor of our vocation." I refer to the disgraceful performance of some of our insanity "experts", feigned and real.

When a psychiatrist testifies that a murderer who is sane now had been seized by an attack of insanity at exactly seventeen minutes past three o'clock on a certain afternoon nine months ago, just before he did away with his victim, the question naturally suggests itself, how in the name of Aesculapius does he know that? No doubt such a phenomenon might occur. But by what medical signs can the expert conclude positively that it did occur in this particular case? And should not the fact that his opponent, perhaps as great an authority as himself, is just as positive that the defendant did not suffer from such an attack, cause him to doubt the soundness of his own opinion and, therefore, refuse to lend his prestige to the claims of shyster lawyers in their attempt to obstruct justice? The worn-out excuse of medicine being an art does not apply here.

For even artists, outside of the impressionistic fringe, have certain universally recognized rules. Surely psychiatry, though not an exact science, is nevertheless not as crazy an art as to make it impossible for two of its exponents to agree on a diagnosis. Why do not the two experts examine and study the case together, and then testify on the same side or refuse to testify for lack of a positive opinion? Such a course would be honest and dignified. But when, to the notorious "hypothetical question," the expert for the defense always answers "Insane!" and the expert for the state just as readily exclaims "Sane!" we cannot help thinking that "there is something rotten in Denmark."

Now, while the ways of experts are inscrutable, they at least make a study of psychiatry and have a right to form an opinion, even in cases where the diagnosis is not obvious to the average physician. But what business has a general practitioner in a contestable insanity case? How can one who is not specializing in psychiatry honestly delude himself into believing that he and not his opponent is right? And why has not the medical profession taken a stand in this scandalous affair for the sake of public security as well as for the honor of the profession?

But here is another actual case. Not very long ago two doctors testified under oath as experts that a certain defendant in murder of the first degree was insane at the time he killed a man, though that took place several months before the doctors laid eyes on the defendant. During the cross examination by the attorney for the state, these men were unable to classify psychoses, or to name a standard textbook on insanity, from which they derived their wisdom. Indeed, their knowledge of the subject was so meager that no reputable teacher of psychiatry could possibly have given them more than a zero for their showing. It was quite obvious that these men committed perjury and conspired to obstruct the ends of justice for money. Did the medical profession expose "without fear or favor" these anti-social imposters to the proper authorities? The names of those two public enemies adorn the membership list of that County Medical Society to this day!

So much for our labor in behalf of the "prime object" of our profession.

How about the principles regulating the conduct among doctors themselves? Here, one would imagine, our profession should come out with flying colors. Considering the bitter struggle we must wage against all forms of competition, legalized and otherwise, common sense would dictate that for the sake of self-preservation, if for no other reason, complete harmony should reign among ourselves. Is not cooperation the fetish of all success worshippers? Nevertheless, here again we have been tried and found wanting.

We have already seen with how much consideration the older doctors treat the young internes. The relations of practitioners to their equals are not much better. For, despite Section 3, Article IV, Chapter 2 of our Code, some doctors do grab patients from one another without making any bones about it. Others, the majority, perhaps, may not stoop to such piratical practices, but neither do they care much where their patients come from. Very few indeed take the trouble to find out whether the late attending doctor had been "properly" dismissed. Neither are many doctors very finicky about expressing adverse opinions of their colleagues behind their backs. The only time we are really kind to each other is at scientific meetings. It seems to be an unwritten rule that any paper, no matter how banal and dull, must be hailed as a masterpiece and applauded vigorously. In this way, we seem to propitiate our consciences for any wrong we may have done the author outside the meeting room.

To break the monotony, I want to mention one rule of our Code which is pretty well observed. I refer to the ban on medical advertising. Of course here and there a bit of publicity does crop up about some member, who is "surprised" to find his name in the press. Occasionally, a colleague might even employ quite ingenious methods for the sake of getting a taste of a little publicity. On the whole, however, the physician does keep off the front page. If only the medical societies would act with as much reserve! Unfortunately, of late, the medical profession collectively has gone in for publicity with as much gusto as automobile vendors. From the newspaper col-

umns, the magazine pages, the broadcasting studios, and the lecture platforms, we are deluging the public with medical propaganda. Needless to say that in this, as in anything else we undertake, our interest is solely in the public welfare. Our aim, we proclaim, is to educate the people in preventive medicine, acquaint them with the latest discoveries of medical science and warn them against the dangers lurking in quacks and patent medicines. Yet, in the light of what was brought out before, one may be pardoned for doubting the official reason for this unprecedented publicity campaign. Our motives would be less open to suspicion had we first done a little housecleaning among our own incompetent and dishonest brethren. For all the chiropractors and Christian Scientists engaged in active business in these United States of America are not so dangerous to the public as are a few ignorant or unscrupulous regular M. D.'s. How much real harm can a chiro do the average patient by punching his back? Yes, he might dislocate a cervical vertebra or hasten the end of a sufferer from Pott's disease. But how often does that happen? Oh, yes, how about the harm done by delaying an urgent operation? Well, how about the harm done by the doctor who treated a little girl for a cold for a whole week without once looking into her throat, until even an intubation could not save her? And how about the learned colleague who kept on injecting an iron preparation under a woman's skin for anemia until another doctor found that she was suffering from an inoperable cancer of the cervix? And how about the good old doctor who kept on reducing a child's fever without trying to find the cause until it succumbed to septic meningitis secondary to otitis media? It is the same old story: it is news when a patient meets his untimely end through the efforts of a quack; it is not news when the same result is achieved through the agency of an M. D.

Some medical societies in their rush for publicity go so far that they even overstep the bounds of good taste. It has come to such a pass that the public finds it exceedingly difficult to dodge the benevolent attentions of the chiros and medicos. Take a state fair, for instance. People go to a fair with the intention of looking at the home products in industry and agriculture; to examine pigs, cattle, and racehorses; to take in a side show and let the kiddies ride the loop-the-loop and the merry-go-round; in short, to forget the daily grind and spend a couple of hours having a good time. But no, it can't be done. The poor citizen must first be made to listen to a lecture on the spine as the source of all human ailments. And, not to be outdone by our friends, the spine adjusters, we go them one better and offer to examine anybody and everybody, free of charge, right there and then. Come one, come all!

Now, how much is such an examination worth? Do the fair grounds provide the proper atmosphere for a scientific medical examination? And do the morons who fall for such stunts bring with them the proper mental attitude to give the examiner a clear history, which is so indispensable for a rational interpretation of the findings? And yet, when it was moved before the County Medical Society, the keeper of the profession's conscience and dignity, to keep its members out of the fair grounds, the motion was able to muster only two votes.

However, if clownish performances on the fair grounds, and the ballyhoo in connection with the annual quest for the one hundred percent baby do little harm to any but our self respect, such is unfortunately not the case with the new advertising scheme—the frequent "round-ups" of crippled children. For weeks ahead of that great humanitarian and scientific event, we spread the glad tidings through the local press and radio that at a certain date the medical savants will hold a "clinic" for crippled children. Hopes rise in the breasts of the unfortunates and their parents that now, when the entire medical organization, instead of only the family doctor, is going to devote its skill and learning to the little invalids, something wonderful will surely happen to the sufferers. What happens is this: the little cripples are crowded in the clinic, and rushed from one room to the other to be examined by men who have no special training nor sufficient time to make a correct diagnosis, to say nothing about suggesting proper treatment. What is more, these same children have been under the care of as com-

petent doctors as are to be seen at the clinic, and those doctors had plenty of time to study the cases and to do whatever could be done for them much more efficiently than clinic doctors can hope to do during the round-up. What benefit, then, does the patient derive from these clinics? Just nothing. And how about the false hopes we raise in the poor sufferers? On every occasion we publicly exclaim our indignation against that scum of humanity which deals in cancer remedies, not so much for robbing the unfortunate of his money, but for what is much more cruel, inspiring in him vain hopes which must end in despair. And then we go and do likewise. A piece of cheap publicity at the expense of suffering humanity. Must we imitate the chiros all the time? They invade all avenues of publicity—we do the same. They examine children chiropractically—we conduct clinics orthopedically. Now that they have started to examine the backs of beauty bathers on the beaches, what are we going to do? Is it not about time that we show a little more respect for our venerable profession and leave the shameful field of cheap publicity to the quacks? If we don't, the public will soon become so confused that they will not know the difference between a C. D. and an M. D.

I believe I have shown conclusively that the medical Code of Ethics does not exist in real life. This is not meant as an indictment against our profession. My thesis is not that doctors as such are worse than others, but that they are not better than others. An unscrupulous surgeon performs an unnecessary operation for money, the same as the shyster lawyer saves a gangster from the gallows for money. That the results of the doctor's misdeeds are often more terrible than those of the lawyer's is obviously not due to the relative qualities of their characters. Either one is doing all he can for himself to the fullest extent of his opportunity. And it surely is not the doctor's fault that his opportunities for evil doing are greater. To those who claimed that the Catholic church was by nature more cruel than the Protestant churches, Lecky replied:

"She (the Catholic church) persecuted to the full extent of the power of the clergy, and that power was very great. The persecution of which every Protestant church was guilty was measured by the same rule, but clerical influence in Protestant countries was comparatively weak."

It is too bad, of course, that the medical profession offers opportunities for more serious harm than do the other professions. But this is no reason for going to the other extreme. To be sure, we are no supermen, but neither are we less than men.

Now, if it is true that we are only human beings, why then should we retain a Code which was made for and by saints? There might have been some ground to argue in its favor, had the medical profession shown any inclination to enforce it. But inasmuch as we ignore it completely in practice, why stick to it in theory? The very foundation upon which our Code apparently rests, namely, the dogma that a profession has for its prime object the services it can render to humanity, has been shown to be erroneous. Such a definition could be applied to the profession of the priest-doctor, and rightly so. For, as in his former capacity, he is primarily interested in his parishioner's soul and only incidentally in the priest's purse, so, when called upon to act as a healer, the priest should also be interested primarily in his patient's body. It is sheer nonsense, however, to expect the same measure of self-abnegation from a secular doctor. Votaries of other professions, architects, engineers, lawyers, and editors, do not pretend to be primarily interested in the public. Why then should we?

Besides, what has the public done for the medical profession to deserve this extraordinary consideration? When they want us, we must be at their call, day and night. When the service is over, the doctor is the last to be paid, if paid at all. It is very rare to find a patient who will come around to express gratitude for what we did for him, even if we actually saved his life, but it is quite common for people to slander their doctors if they were unable to perform miracles. And how they do abuse our misplaced conception of charity! The writer was called out of bed in a stormy night to treat a poor Mexican woman several miles away from his home. The American lady who called him was kind enough to inquire of the writer whether she could be of any assistance. When the writer told her that he would appreciate a check right then instead of having to send her a bill at the end of the month, the kind lady was shocked. And her answer to the writer's query whether she

would call the druggist out of bed and ask him to bring up medicine without expecting to pay him, is characteristic. "But you are a doctor," she exclaimed, "and I thought I was doing a humanitarian act by calling you to treat a poor woman."

As for the patients themselves, we all know how ready so many of them are to plead poverty in order to make use of free dispensaries. The same people who would be ashamed to apply to charity for food or cover, have no hesitancy in accepting charity given them in free clinics. Nor are the organizations in charge of the dispensaries very particular about the economic status of the applicants. All that they seem to be interested in, is in fat annual reports containing long lists of patients treated at the institution free, even if it does mean so many dollars diverted from the doctors' pockets. To cheat the medical profession does not seem to be a serious offense. Don't the doctors themselves claim that they are primarily interested in the service of humanity? What harm then if a patient of ordinary means is treated in the dispensary? He can find plenty of places to put the money saved in that manner. He might use the money to make a payment on the car, or radio, for instance. And how do the people reward us for all the free service we give them? They aid and abet everybody and everything that works against us. And when we point out to them how dangerous it is to trust in illegal healers, they go ahead and legalize the quacks. Saints, of course, may overlook all that. But for us under these circumstances to tell the world that we are interested in their welfare more than in ourselves and our families is not merely untrue—it is ridiculous.

Let us then be done with sham, and place our Code in the museum where it belongs, together with Egyptian papyrus and Greek medical divinities. Let the priest be "pure, modest, patient," and so forth, and let us be "upright men instructed in the art of healing." In a word, let us be doctors, and not altruists and moralists. And to those of us who might object because of fear that by giving up our sublime principles people will stop respecting us, I would answer that people do not respect us even with our principles. If they did, they would not ask us unblushingly to perform abortions and commit perjury on all kinds of false certificates. Moreover, there is no valid reason why doctors should be respected more than chemists or actors. Respect is inspired by some extraordinary accomplishment of character or wisdom. And there is nothing in our profession calculated to change an ordinary person into a respectable sage. Let us be men enough to face the facts, unpleasant as they may appear. And the fact is, that the average doctor is a narrow minded mediocrity. He started the study of medicine with a poor educational equipment, and he has never taken the trouble to catch up with the main currents of intellectual advance. Try to discuss with him any serious question outside of medicine and golf, and you will find him woefully uninformed and prejudiced. How many doctors belong to literary or philosophic societies? How many are actively interested in movements which aim to make this world a better place in which to live? Watch the behavior of a group of average doctors at a convention. See how heartily they applaud every so-called scientific paper, even if it is devoid of one original thought. Follow them into a smoker and listen to the stuff that passes for "humor", and you could hardly distinguish them from any other collection of Babbitts. As for those among us who really deserve respect, they will get it, code or no code.

What, then, are the results from our retaining the bombastic Code? It makes cynics of the young doctors, it supplies effective ammunition to the charlatans, it encourages the exploitation of the profession and at the same time it increases the public distrust in us, and it makes us look ridiculous in the eyes of thoughtful people. Surely this is too high a price to pay for the thrill one may derive from pretending to belong to an ancient and honorable fraternity of saints.

By giving a decent public burial to our dead or stillborn ethical code, we shall gain in self-respect, and we shall also have made an important contribution toward improving the precarious economic condition of our profession. As long as we keep on proclaimnig that we are primarily interested in the good of humanity, and that financial reward is but of secondary consideration with us and that, in any case, we are in duty bound to treat the poor free, the public cannot be blamed very much for showing so little regard for what we

claim to care for so little ourselves. We cannot expect the present-day hard-boiled public to look out for our interest when we refuse to do so ourselves.

Sooner or later, we shall have to face the question of free medical service seriously. So far, only the doctors of Orange Free State in South Africa have shown enough courage to refuse free service to the hospitals. (JAMA, Vol. 97, p. 337.) It is high time that we take a similar stand. First, we have destroyed a great part of the source of our income by spreading the gospel of preventive medicine. Now, the remaining ground has been slipping from under our feet by such creations as state, county, industrial, and group medicine. It is time that we do something to sustain the struggling doctors. The enormous volume of free service we dispense privatetly and at the public institutions would help materially thousands of doctors who find themselves in economic distress.

But how about the poor patient who is not able to pay for medical service? Well, how about the starving unemployed who are not able to pay for food? There would be as much justice to demand free bread from the baker, free housing from the landlord, and free clothes from the haberdasher as there is in expecting free medical service from doctors. The poor must be supplied with the necessities of life, medical care included. But that is the business of society as a whole. Whether it is to be done by the state, or by organized philanthropy, we doctors, as good citizens, shall contribute individually to either method as liberally as any other citizen of similar means. But in fairness to ourselves, our families, and the thousands of doctors who are struggling to make ends meet, we as a profession must refuse to continue to shoulder the poor man's medical bill.

My proposal, therefore, is that we proclaim our new policy to the public. Let us tell the world that we did away with ancient codes the same as we did away with blood-letting; that we took up medicine not because, like priests, we heard the call, but because, like men, we had to earn a living; that we owe the public no more consideration than that which is expected of other good citizens; that the safeguarding of the health of the community is no more our particular business than protecting the lives and property of the people is the particular business of the legal profession; that as we are ready to share in all the duties of citizenship, we are also entitled to benefit from its privileges; and that henceforth we shall avail ourselves of the right granted every person by legal and moral law to refuse to work without pay.

To be sure, such a declaration will cause a sensation. At first the public will be shocked. We have got the dear public so spoiled with our preposterous altruism that our new Magna Charta will be considered an outrage. The press will be flooded with copy condemning the greediness of the medical trust. Comparisons will be drawn between the old-time saintly family doctor, whose only interest in life was the alleviation of suffering, and the new commercialized, heartless practitioner who would let a patient die unless he is paid for his services. Sermons will be preached depicting the cruelty of this gross materialistic age when even doctors, whose mission in life from time immemorial was to minister to human suffering, are now brazenly bartering away the noble traditions of a most noble art for the filthy lucre. Quacks and their followers will gleefully shout, "We told you so!" and impetus will no doubt also be given to the agitation for state medicine. But what of it? All this has been going on for years, and a few more vitriolic denouncements will not make much difference. But, in time, after the novelty of seeing doctors demanding to be paid for their services just like judges and bishops, shall have worn off, reasonable people will begin to realize the justice of our position. In the end, common sense will prevail, and instead of indignation, people will wonder why we did not take our just stand long ago. And they will respect us more. We all know how little one appreciates what he gets for nothing. As far back as the third century, an opinion was expressed in the Talmud that a physician who heals for nothing is worth nothing.

After the medical profession shall have come out from the underbrush of pretense into the open of honest and dignified self-interest, the field will be cleared for gentlemen doctors to unite into a guild, a union, or a mutual-aid society. Membership will be restricted to competent and decent doctors, each of whom shall be able to furnish satisfactory

evidence (1) that he is not a saint and does not wear a halo around his head; (2) that he is a man of his word and will adhere strictly to the letter and spirit of the rules of the guild. These rules will embrace simple and explicit regulations governing the conduct of the doctor toward his patient and his fellow-member of the guild. We shall retain whatever is rational in the present medical code and add to it rules which would protect our financial interest and common decency.

The first rule would state that no member may treat any patient free of charge except in emergencies. The second would prohibit members to charge less than the regular fee schedule. The rule of the present Code about not treating a case until the attending doctor is properly discharged would, of course, be retained and **enforced.** Then there would be rules against operating without a consultation, and against general practitioners proclaiming themselves specialists without proper training and experience, and against degrading the medical profession through "expert" testimony in court. The new guild not being a society of saints, there will naturally not be any rules in its Code governing the private life of a member.

We shall, of course, be attacked by doctors who could not qualify or who would not play the game according to the rules. Individually, we may not be able to stand up against them. But united we have nothing to fear. At the beginning we shall have to make use of some form of publicity to acquaint the public with our aims. In our debut, we shall tell the people that the guild embraces such members of the profession who refuse to be considered easy marks, but at the same time wish to practice medicine decently; that while we are going to demand a fair fee for our services, we are also going to put the best we have into that service. We shall publish the rules and the names of the members, and then pledge our collective reputation for the professional conduct of every individual member. It will then be up to every member to see that disloyalty to our protestations on the part of any member be dealt with summarily.

And as soon as the public finds out that we mean to keep our promise, we shall need have no fear of competitors with teeth and claws. We shall derive moral strength from the realization that we belong to an organization which places a value on adherence to principle. And we shall live up to our protestations, not because we are saints, God forbid, but because we prefer to fight the battle for existence in a practical but also in an esthetic manner. Yes, we are artists. And as artists, we derive a greater thrill from a piece of work well done than from the fee we get for it. It is a kind of selfishness with artists to give their best to their work. If this selfishness happens to coincide with the interest of the patient, so much the better. But we are not going to make ourselves ridiculous by claiming that we are primarily interested in the welfare of the public, when, as a matter of fact, like other mortals, we are primarily interested in self preservation. However, unlike some mortals, we prefer to accomplish this aim in a decent and civilized way.

PROBLEMS OF THE CLAIMS DEPARTMENT OF THE INDUSTRIAL COMMISSION.

C. LEO GUYNN, Claims Manager,
Arizona Industrial Commission,
Phoenix, Arizona.

(Read before the Forty-third Annual Meeting of the Arizona State Medical Association, held at Prescott, Arizona, June 7-9, 1934.)

The primary function of an organization such as the Industrial Commission of Arizona is to provide a means of compensating, through an efficient administration of the Workmen's Compensation Law, the workmen who are disabled as the result of injury by accident arising out of and occurring within the course of employment. To contact the injured man, to centralize all information related to his claim, to assure the prompt payment of his compensation, and at the same time keep a watchful eye upon the results obtained from, as well as the cost of, the medical treatment to which the workman is entitled, we have the Claims Department.

To elaborate upon our duties to the injured workmen, I will say that without a doubt our greatest responsibility is that of centralizing and preserving all of the available information pertaining to any one case, in one file where it is readily available as a permanent

record. To anyone not familiar with the necessity of building up an accurate permanent record, upon which the injured workman may base his claim, the importance of this phase of our work may seem somewhat overstressed. However, I can assure you that such is not the case, for as the file is built up, first a surgeon's report, then an employer's report, together with the workman's claim and maybe an investigator's report, a permanent record is established which is the basis for any decision the Commission may later make and upon which the man's case must stand or fall. In those rare cases where the claim is carried up to the Supreme Court, the same record which was first started immediately following the injury, and which has been built up by the Claims Department, is the evidence and the only evidence which the Court will consider as it sits in judgment upon the case. Naturally, the work in connection with the building up of these records is the source of one of our major problems. However, we cannot allow ourselves to become discouraged, and therefore must keep plugging along, adding a little information here and a little more there until we have built up a file which paints a true picture of the case, and which will enable the Commission, when the case comes up for final determination, to readily ascertain the facts and award the compensation to which the claimant is entitled.

Now for a moment I want to leave our problems as they directly affect the injured man and say just a few words about our duty to the employer and to the industrial surgeon. To the employer we are responsible for the economical administration of our office; we must see that his employees receive promptly the compensation and medical benefits to which they are entitled. However, we also owe it to the employer to see that the costs do not exceed the maximum which is justified in each case; for in the long run, it must be remembered, the employer holds the purse strings, and upon his ability to pay premiums rests the security of the fund.

With respect to the duty we owe to the medical profession, I shall say that I would much rather listen while some one of your group would give us your views on this subject. But to give you something to shoot at, I will start out by saying that above all else we owe you 100 per cent cooperation in your work. Whenever possible, your suggestions and recommendations for the handling of the medical side of the industrial cases should be followed to the letter, you should be given a free hand in the treatment of the cases which come to you, and never in any event should anything be done or said by anyone connected with this Commission that will destroy the confidence the injured man has in the surgeon having charge of his case. And now, believe it or not, I am going to say that one of our first duties to the medical profession is to see that you receive prompt and fair remuneration for the services you render. The Commission, either direct or through the Claims Department or Medical Referee, should have no pets; and particularly in the payment of bills and the referring of work, should all be treated alike.

And now, just a few minutes with respect to our ideas of your duty, as members of the medical profession, to the injured workman, the employer, and the Commission. Far be it from me to attempt for one minute to dwell upon the duty you owe a patient. You gentlemen have all been highly trained in your profession, and the fact that you have dedicated your life to the service of suffering humanity, and the fact that you have enjoyed years of successful practice, prove more than any mere words that you appreciate the true value of real service and have a clean-cut understanding of the duty you owe to your patients. However, I do feel qualified to touch upon the duty you owe a patient as it applies to the psychological side of an industrial case. In ninety-nine out of every hundred cases, I am the fellow the injured man comes to see when you men are through with him; in the hundredth case the widow comes to see me. When these men strike out for our office, they are usually thinking about two things, settlement and getting back to work, a few are thinking only of settlement, and, believe me, at least 75 per cent of them are hard to handle. Some men are mean and pound the desk and demand more than justice. Industry has broken their bodies, and somebody is going to pay and pay plenty. Don't think for one moment that we are not anxious to see a disabled workman get everything he has coming to him, but we do hate to pay for subjective

symptoms and imaginary disability, which in most cases exist only in the mind of the patient. Maybe the original report did not disclose a very serious injury, and perhaps the final report states that there are no objective findings, but the man has since the occurrence of the injury been allowed or helped to exaggerate his disability until, when it comes time to settle, a fracture of a transverse process has become a broken back and a slight blow on the head has become a fractured skull, and even the liberal terms of our compensation law will not begin to satisfy. So we are going to ask that, after you have repaired the physical damage in these serious cases, you begin right then to prepare the injured man for the day when he has reached the maximum of recovery and must again take his place in industry. Try to instill in him a desire to fight his way back, and try to keep him from forming the idea that his case is hopeless. I sincerely hope that I never hear another man say that his doctor has told him that his case is hopeless and that he need never expect to do any gainful work during his lifetime. One of our claimants told me that only last week.

With respect to the employer. Your duty to the employer is parallel to ours, in that you should help to keep the medical and compensation costs within due bounds and not be extravagant in the matter of treatment or the time allowed on compensation. Although the welfare of the patient should never be sacrificed for the sake of economy, nevertheless the ability of the employer to pay should never be completely lost sight of.

To give you a clearer understanding of what I mean in this respect, I shall read excerpts from letters which we received recently regarding two cases in widely separated parts of the state. In both cases the men were seriously injured, one man requiring a private room with a special nurse; the other could have been cared for very nicely in a ward. Taking the first case, I will submit a letter from the superintendent of the hospital, which was in reply to a letter I had written complaining against the charge made for the private room and several irregular items which appeared in the bill:

Gentlemen:

We are submitting herewith the hospital bill for Mr. John Doe, from August 30th to September 15th inclusive. When he entered the hospital we did not know whether he was a county patient or would pay his expenses. I am now informed by Dr. So-and-So, the county physician, that he is an industrial claimant. When he came in he was put in an up-stairs room which was a ward room of two beds, but the second bed was removed from the room. However, Dr. So-and-So demanded that he be brought down stairs and selected the best room in the institution. He is still in this room.

We are submitting our bill according to the prices of the two rooms. You will notice certain personal necessities which the doctor ordered me to buy and put on his bill. These have all been paid for by the hospital, and I trust you will see your way clear to take care of them.

Tooth brush and tooth paste	.60
3 packages Bull Durham	.18
4 pr. pajamas	3.92
1 pr. sox	.49
State tax	.07
	5.26
Shaving brush	1.00
Gillette razor	1.00
Probak blades	.25
Colgate's shaving cream	.32
Citrocarbonate	1.00
Brush outfit	3.50
1 mirror	.75
	7.82

In the other case the doctor's letter speaks for itself. Here are a few excerpts from the same:

Mr. Jones, as you know, suffered several very severe injuries and was in a very critical condition for several days. Although he was under the care of two exceptionally good special nurses, they worked under a handicap, inasmuch as the superintendent of the hospital did not have sufficient linen to properly care for this patient.

Instead of replenishing the supply, which was overtaxed due to the catastrophe here, the patients simply had to do without many necessary supplies. This condition was in part relieved as I purchased necessary linen and charged the same to the Industrial Commission.

The food furnished all the patients is of the poorest quality, scanty and not properly balanced, especially for a patient who needs to build up bodily resistance against infection. The drinking water and water used for cooking purposes is about the poorest in the West. This water contains many harmful ingredients, and it is not fit for drinking purposes. Hence it was necessary to purchase distilled water for drinking.

Sunday, April 30th, I transferred Mr. Jones by ambulance from the General county hospital to the (————) Hotel.

Certainly all of you will concede that the attending physician in both of these cases, acting as they did without authorization, utterly failed to display the proper spirit of cooperation In the first instance, we most certainly could not pay for personal items such as pajamas and tooth paste, especially when the injured man, who was single without dependents, was receiving compensation in addition to having all of his expenses paid, and

certainly the doctor exceeded his authority when he directed that these items be charged to the Commission.

In the second case, no emergency existed, and surely a request for authorization to make the expenditures and changes could have been made in five minutes by long distance telephone, and the amount of money involved would certainly have justified the expense of a telephone call.

I have purposely saved until the last that part of my remarks which it is hoped you will remember the longest, in fact, that part which I am most anxious to put over. I have reference to the duty which you owe to the Industrial Commission, and particularly the Claims Department, to the end that we may more effectively do our work. First, you owe us 100 per cent cooperation wherever our work brings us together. To that statement, I add that, without your whole-hearted support, we could not operate. Finally, I'll say that in 95 per cent of our cases we do have your splendid help and cooperation, and in a large percentage of those few cases where we are handicapped by a failure to obtain the support of some member of the medical profession, it is because of some misunderstanding. There are, however, a few cases where we are compelled to conclude that the failure to cooperate on the part of the doctor is due to nothing else but pure meanness. Getting down to definite things, there is really nothing more important than this first report. If we could sell you the idea that this report means a great deal to us and to the claimant, and that every bit of information asked for in this form is necessary in order that we may properly classify each case, then one of our biggest problems would be solved. You would truly be surprised if you could see some of the initial reports which are sent in. So many medical men are prone to give a very beautiful description of the injury, then a glorified description of the wonderful treatment which has been given the patient, and not one word about the accident which caused those injuries. We cannot tell whether the man fell down a mine shaft, or was pitched off a bucking horse. Not just now and then, but every day we receive reports reading like this:

"Sprain, right ankle."

"Foreign body left eye."

"Contusion right index finger."

Please do not think that we do not appreciate the value of accurate and complete medical reports—we do; but do not forget this other angle, and just remember when you are making out an initial or follow-up report that, after your reports leave the office of the Medical Referee, they pass into the hands of laymen and are thereafter considered and studied by men whose knowledge of medicine and surgery is extremely limited. Also remember that maybe one, two, or three years later some Commissioner or Referee or Supreme Court Justice may be scratching his head and wondering what in the devil Doctor So-and-So meant by a certain report. Your report may contain the information needed to decide the compensability of a case, and often your first report will greatly affect the amount of compensation or be the deciding factor in a death claim. If just one item in the chain of events is omitted in your report, we are forced to write to you or to the employer for details. Finally, in about two or three weeks, when we get the information which we should have had with the first report, and then the case proves to be non-compensable, and we are forced to write and tell the doctor that we cannot assume responsibility for any medical costs in the case—do we get some violent reactions? You should read some of the medicine we have to take. Another important item in this report is your estimate of the length of time the man will be disabled. We realize that it is very difficult to give an accurate figure in this respect. However, we want you to know that we depend upon the correctness of your estimate when we set up a reserve to carry the case through to a final settlement.

And right here I want to deviate from the subject of reports for just a moment and speak about the question of non-compensable cases, which give us so much trouble. In order that you may more clearly appreciate the basis of our decisions in this type of case, I will quote from Section 1438 of the Revised Code 1928, which provides for the payment of compensation:

> Every employee of an employer within the provisions of this article, who shall be injured by accident arising out of and in the course of employment, or his dependents, as hereinafter defined, in case of his death, shall receive the compensation herein fixed.

Let me repeat, "injured by accident arising out of and in the course of employment." There we have four distinct and separate elements: the injury, the accident, arising out of employment, and occurring within the course of employment; and in order that a case may be compensable, all four elements must be present and concurring.

More clearly to illustrate the requirements in order that a case may be ruled as compensable, I shall tell you of a case which was recently reported from a small mine in the southern part of the state. The hoisting engineer at this property worked a continuous eight-hour shift without any time out for lunch, and would, therefore, be regarded as being in the course of his employment from the time he came on shift until he was relieved at the end of the shift. The underground foreman had come to the surface for lunch and was sitting on a bench in the engine room talking to the engineer. About noon the underground crew gave the signal to be hoisted to the surface, the engineer hoisted the crew, cut off his engine, set his brake, and resumed his conversation with the foreman. The position of the engineer placed him about four feet from any of the machinery and he was standing with his hands in his pockets. Suddenly he straightened up, whirled half around, and fell to the floor, striking the floor in such a manner as to break his jaw and render him unconscious. Without going into further detail, I will say that the case was rightfully ruled as noncompensable, and here is the answer. True, there was an accident: the fall and the violent striking of the jaw on the concrete floor was the accident; certainly the fracture of the jaw, and so forth, was an injury; and all of this occurred within the course of the man's employment, because he was on duty at the time. But the final element was lacking: the injury by accident did not arise out of the employment. Nothing that the man was doing at the time for the benefit of his employer, no inherent risk or hazard peculiar to that occupation, caused the man to fall; his disability clearly resulted from conditions outside of his employment.

Now a few words about back strains and hernias. If we could get the true facts about all back strains or sprains, I would say that 75 per cent of them are noncompensable. An intentional act such as pulling or jerking on the handle of a long Stilson wrench, or picking up a sack of grain, is not an accident, and the fact that a pain in the back comes on concurrently with an act of lifting, will not justify a ruling that the man is disabled as the result of an accidental injury. Something unexpected, such as a slip or severe strain, as where four men are carrying a heavy object and three let go and one is compelled suddenly to take the entire weight, must occur to make the case a compensable one.

Inguinal hernias give us almost as much grief as they do the victim. You men claim that they are all congenital and, where they occur following a strain or blow, they are at best an aggravation of a pre-existing condition. To guard against fakes and set-ups, the statute has laid down certain definite requirements which must be met before a hernia claim may be allowed. Strange as it may seem to you, the basis of the decision is not medical facts—your report stating the man has a hernia is sufficient in that respect; the case will turn on the presence or absence of certain acts and occurrences, and here they are:

> That the immediate cause, which calls attention to the presence of the hernia, was a sudden effort or severe strain or blow received while in the course of employment; that the descent of the hernia occurred immediately following the cause; that the cause was accompanied, or immediately followed, by severe pain in the hernial region, and that the above facts were of such severity that the same were noticed by the claimant and communicated immediately to one or more persons, in which event they are considered to be aggravations of previous ailments or diseases, and will be compensated as such for time lost only to a limited extent.

Unless the alleged traumatic hernia meets all of the statutory requirements, the claim must be disallowed.

Many times we are compelled to rule a case noncompensable when we would much rather decide otherwise, but we want you to know that, when we do deny compensation, it is only after the Commission has carefully considered the case from every angle and the evidence is found to be insufficient to justify a decision in favor of the claimant.

Again returning to the subject of accurate and complete reports. I want to say a few words about the final report you submit when a case has been finally closed insofar as the medical side is concerned. Perhaps the most

important bit of information in your final report is that setting forth the amount of permanent disability, or the permanent loss of function as it affects the injured member. Where the disability is self-evident, such as the loss of an arm by amputation at the elbow, or the loss of an eye by enucleation, we quite often are able to get two of the examining surgeons to agree as to the percentage of disability. But that is about the extent of our success in that direction. Where the permanent disability causes a partial loss of use of an arm or some other member, it has been next to impossible to obtain two reports on the same case that will come anywhere near an agreement. If the reports come within 20 per cent of one another, we conclude they are both reporting on the same patient; and we give the man the benefit of the doubt, take the higher estimate or split the difference, and make an award, in order that the case may be settled. Recently one of the mining companies sent in a man for the purpose of having his partial permanent disability evaluated and his case settled. The injury was to the leg. From six surgeons who examined the man, we received one report stating there was no disability which could be attributed to the accident; a second stated there was a disability equal to 10 per cent of the leg; while a third estimated the functional loss at 20 per cent; two others went as high as 50 per cent; and one liberal fellow sent in a report placing the disability at 60 per cent of the leg. In another case recently, involving an injury to a leg, we had six different figures, all supposed to be the correct figures. We had 10 per cent, 15 per cent, 20 per cent, 25 per cent, 35 per cent, and 50 per cent. As you know, that kind of stuff would be duck soup for a politician. He could pull most any kind of a disability rating he needed out of his bag of tricks. But to a Commission trying conscientiously to make awards based upon actual disability, it is quite a serious problem. Naturally, the differences of opinion are the source of a great many arguments. In all cases the injured man is sure that the only report which should be given any consideration at all is the one reporting the highest percentage of disability. If he does not like the sound of the reports we usually obtain first, which come from the attending surgeon and the Medical Referee, he will shop around a bit, and in most cases come back a few days later with a report that likely states the disability is 100 per cent greater than anything previously reported. Believe me, it is a mighty tough job to convince the man that perhaps an average of all the reports may be a fair basis for settlement, and the suggestion that one of the lower figures should be used is usually met with a retort that he will "go get a lawyer and see what can be done about obtaining justice."

Besides being a source of trouble, these discrepancies with respect to the amount of partial permanent disability in any one case have convinced us in the Claims Department that some standard method of evaluating partial permanent disability in industrial cases must be devised and adopted by the medical profession and approved by the Industrial Commission, if the compensation for this type of disability is to be awarded on anything like a fair basis. I know that Dr. Ralph Palmer has been working on a rating schedule for some months past. I understand his paper on the subject was read and discussed today. We sincerely hope that your State Society will see fit to work with Doctor Palmer in this respect.

DON'TS FOR DOCTORS

When examining a patient for the purpose of determining the amount of permanent disability, base your estimate on functional loss of the injured member only. **Don't** try to take into account the man's occupation, his loss of earning capacity, his age, and so forth; those are problems for the Commission to solve.

Don't attempt to advise an injured workman regarding the compensability of his case. The Commission alone can make that decision after a careful consideration of all of the evidence.

Don't treat a case that has previously been seen by another surgeon, without the consent of the physician who first saw the man and without authority from the Commission.

If you are doing industrial work, **don't** fail to familiarize yourself with the fee schedule and the rules.

Don't fail to write in and give us the very devil whenever we have it coming.

In closing, permit me to say that it has been an extreme pleasure to have had the opportunity of coming here for a discussion of our mutual problems.

I sincerely hope that any of my remarks which may have seemed critical, will be accepted as conscientious criticism intended to bring more clearly to your attention our daily problems as they are affected by you in your work. You may rest assured, criticism of our work or our treatment of you will be appreciated, for it is only when we know of our mistakes and shortcomings that we are able to correct them. And last, but by no means least, let me repeat what I have previously said here this evening, that, without your cooperation and support, we cannot possibly succeed in our work, and we hope that, in our daily contact with you men, we may so impress you with our sincerity of purpose and our desire to administer the terms of the Workmen's Compensation Law efficiently for the benefit of those workmen who are injured in industry, that you will gladly come forward and extend your cooperation, which to us is so vital.

ALLERGIC REACTION – AN IMPORTANT CAUSE OF ABDOMINAL PAIN.

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El Paso, Texas.

(Read before The New Mexico Medical Society, at its Fifty-second Annual Session at Las Vegas, N. M., July 19-21, 1934).

The object of this paper is to present a group of cases manifesting important abdominal symptoms, the allergic origin of which is often overlooked. Quoting from Osler: "In any form of purpura, in the erythemas and urticaria, visceral lesions may occur. There may be gastro-intestinal crises, pain, vomiting, melena, and diarrhea. These attacks have often been mistaken for appendicitis or for intussusception and at operation the condition has been found to be an acute sero-hemorrhagic infiltration of a limited area of the stomach or bowel. Identical attacks occur in angio-neurotic edema. These crises may occur for years in children before an outbreak of purpura or urticaria gives a clue to their nature." Osler[1,2] reported nineteen cases of purpura with abdominal pain, known as Henoch's purpura, in 1895 and 1904, and predicted that "before long the anaphylactic key would unlock their mystery."

The average physician is already familiar with the splendid work done by many able investigators in the field of anaphylaxis and allergy since the time of Osler. However, the effect of the allergic reaction on abdominal pathology and symptomatology is not so often recognized as in the more common manifestations such as hay-fever and asthma.

CASE 1. Girl, age 6 years, was awakened with severe abdominal pain. There was vomiting of bilious material from which food was absent. The pain continued during the day without any definite localizing sign. Urine negative. Leukocyte count, 9000, with polynuclears 80 per cent. Temperature to 99° F. Toward evening, when we advised calling in a surgeon, it was noted that the child had several urticarial lesions. The eruption soon became general and the pain quickly subsided.

This little girl would seem to have been a perfect illustration of a severe attack of abdominal pain of allergic origin. The cessation of pain with the appearance of hives was dramatic. Sequence of allergic symptoms in Case 1: (1) abdominal pain, (2) hives.

CASE 2. Male. Age, 28 years. Chief complaint: Diarrhea, of one month's duration, and sick headaches. History of jaundice at the age of 10 years. Appendectomy at the age of 22, on account of disturbed digestion and tenderness over the appendix but without acute attacks of pain.

He had had recurring urticaria, with pain and soreness in various joints, especially those of the hands, over a period of two years. Once in two or three months during that period, he had a violent headache which was relieved by a purgative.

It was hoped that this young man would be relieved of his symptoms by the removal of the appendix but the results were disappointing. Remember, there had been no acute attack of pain, only digestive disturbance and localized tenderness. Skin and joint symptoms came later. Food trial and testing enabled him to select a diet on which, save for occasional mild outcropping of hives, he has been well for two years. Sequence of allergic symptoms in Case 2: (1) chronic appendicitis (appendectomy), (2) sick headache, (3) urticaria with joint pains and soreness, (4) diarrhea, chronic.

CASE 3. Woman, age 42 years, Multipara. Came first in 1929 complaining of persistent bloating and belching, with periodic attacks of pain in the upper abdomen radiating from the

gallbladder region to the back. At other times the pain would be felt in the right flank and lumbar region. Ten years before, the right kidney had been fixed. Between the ages of 20 and 30 years she began to have sick headaches. For about a year she had had hives at intervals. Now and then one or more joints became tender and painful.

Physical examination was in the main negative, except for some tenderness under the right costal arch and over the gallbladder triangle. X-ray examination showed a rather large gallbladder not completely emptied in 32 hours. A year later, in 1930, a cholecystectomy was done and the pathologist reported only slight evidence of disease. There was some improvement after operation, especially with reference to the sick headaches, but the pain in the right upper abdomen, and the bloating, continued.

A year after operation the patient returned complaining of pain and distress in the right upper abdomen, occasional sick headaches, fatigue, insomnia, rheumatic pains in various joints. At this time numerous bruised-looking spots were noted on the legs. These spots, she stated, returned without trauma from time to time. She also disclosed that she began to have hay fever some 18 years before and a little later developed asthma. Both conditions had continued intermittently.

From first to last this woman presented a bizarre group of symptoms. The kidney symptoms were not relieved by fixation. There was a typical gallbladder history, but removal of the gallbladder gave practically no relief. At the last examination, the patient stated that during the previous year she had been having joint pains and that for three years she had had hives intermittently; further, that she had had asthma and hay-fever for eighteen years. In addition, it was learned that she had had purple spots on the legs for six months.

The history, symptoms, and physical findings would seem to justify the diagnosis of Henoch's purpura of allergic origin. Sequence of allergic symptoms in Case 3: (1) hay-fever, asthma; (2) periodic sick headaches; (3) nephralgia, nephropexy (no relief); (4) urticaria with joint pains and soreness; (5) pain in gallbladder region and bloating (cholecystectomy without relief); (6) purpura, Henoch type.

CASE 4. Woman, aged 43 years. Married; no children. Had scarlet fever and diphtheria in childhood and in 1925 one or two attacks of abdominal pain. In 1926 she began to have pain in the right upper abdomen with referred pain to the back, and sick headaches at intervals. In January, 1927, she was in bed for three weeks with intermittent abdominal pain and a great deal of nausea. In January, 1930, a cholecystectomy and exploratory operation was done. After operation, upper abdominal distress, pain in the back and legs, with nausea, bloating, and constipation, persisted. In April, 1930, she began to have purpuric spots on the legs. It was noted that an attack of abdominal pain was accompanied by a crop of purple spots. These were tender, gradually faded out, and disappeared after a week or ten days. In May, 1930, she had urticaria. The abdominal symptoms continued. In May, 1931, considerable dark blood was passed in the stool and the nurse in attendance noted an unusual flow of blood at the close of a menstrual period. About this time, during a month's stay in the hospital, she had numerous attacks of abdominal pain (at times of great severity), always accompanied by nervousness, bloating, and gas disturbance. In the summer of 1931, she had hay-fever. It was found that the hypodermic injection of adrenalin after the onset of abdominal pain gave great relief. Examinations of stools, urine, and blood (including clotting time, bleeding time, and platelet count) were negative.

In addition to Henoch's purpura this woman showed at least three common manifestations of allergy—urticaria, hay-fever, and sick headache. That the purpuric spots and abdominal pain were part of the allergic syndrome would seem proven. Sequence of allergic symptoms in Case 4: (1) abdominal pain, localized in gallbladder area, (2) after 4 years, cholecystectomy without relief, (3) purpura, Henoch type, (4) urticaria, (5) hemorrhage, intestinal and uterine, (6) hay-fever. We learned now that adrenalin gave her temporary relief from abdominal pain.

CASE 5. Male, age 25 years. Past history was not significant except that about a year before he had been awakened by severe pain in the epigastrium, which lasted for about an hour. He was nauseated and vomited and after vomiting was relieved from the pain. During the following month he felt well and then had a second attack, which lasted for two or three days. The pain was paroxysmal in character and very severe. During this attack some of the joints became tender and painful and there was an erythematous rash on the body, beginning on the legs. The joint pains and eruption continued for several days after the abdominal pain ceased. He had several milder attacks and about nine months later a very severe attack. This time the pain was more localized in the right lower quadrant of the abdomen than it had been before. Operation was done and a gangrenous appendix was removed. After operation the patient was well for about four months. Then he had a series of attacks of abdominal pain coming more or less frequently. He had suffered with abdominal pain most of the previous night before I saw him and the referring physician stated that

he had had some fever and had vomited considerable blood.

On examination we found a well-built, healthy-appearing ranchman. The nervous system, heart, respiratory systems, were normal. Aside from some tenderness in the epigastrium, examination of the abdomen was negative. There was an eruption over the body, most marked on the arms and legs. The lesions were millet-seed to split-pea in size and dark-red in color. Several of the joints were tender but no enlargement or redness was noted. On the legs, between the knee and ankle, the eruption became confluent. Two specimens of urine showed a marked trace of albumin, with many mixed hyaline and granular casts and both red and white blood cells. Blood examination showed normal clotting and normal bleeding time with normal platelet counts.

This man appeared to have a typical Henoch's purpura. On account of negative blood findings, hemorrhagic purpura was ruled out. The commoner manifestations of allergy, such as hay-fever, asthma, and so forth, were absent, but the skin, joint, and mucous-membrane manifestations were present. Sequence of allergic symptoms in Case 5: (1) epigastric pain, (2) erythema, with sore and painful joints, (3) appendicitis, gangrenous appendix removed (attacks of abdominal pain continued), (4) hemorrhage from stomach and intestines, (5) kidney involvement with numerous R.B.C. and W.B.C.; hyaline and granular casts in urine.

Symptoms Tabulated	Cases				
	1	2	3	4	5
Abdominal pain, not localized	o			o	o
Abd'nal pain, appendix region		o			o
Abd'nal pain, gallbladder region			o	o	
Abdominal pain, kidney region			o		
Abdominal pain, epigastric					o
Purpura			o	o	o
Urticaria	o	o	o	o	
Erythema					o
Joint pains and soreness		o	o		o
Hay-fever			o	o	
Asthma			o		
Sick headache		o	o		
Diarrhea, chronic		o			
Hemorrhage, gastro-intestinal				o	o
Hemorrhage, uterine				o	
Nephritis, with red cells in urine					o
Nephralgia, nephropexy			o		
Operation, no relief		o	o	o	
Operation, relief					o

Note.—o signifies symptoms shown.

Allergic reaction in the gastro-intestinal tract produces changes due to serous exudate, edema, and hemorrhage Derangement of the capillary mechanism is the underlying pathology and any allergen which can produce this derangement may call forth the syndrome. For example (a) certain foods, (b) anaphylactic toxins associated with bacterial protein, (c) hystamine-like substances which may originate in the gastro-intestinal tract as a result of the elaboration of the protein molecule, and so forth.

CONCLUSIONS

Abdominal symptoms, especially abdominal pain, may be caused by allergic reactions.

The presence of one or more of the allergic signs, or the history of them, in connection with abdominal pain and distress, should give rise to investigation.

The nature of allergic reaction in the abdominal viscera is such that it may lead to serious complications and to urgent demand for surgery. On the other hand, radical abdominal surgery on such patients, done for apparently good reasons, especially for removal of the gallbladder, may be disappointing.

REFERENCES

1. Osler: Practice of Medicine, 9th edition.
2. Osler: Visceral lesions of purpura, Brit. Med. Jour., 1914, p. 517.

DISCUSSION

DR. L. O. DUTTON, El Paso, Texas, (opening): It is gratifying to those of us who are doing a good deal of allergy work, to hear men working in other fields recognize the allergic end in their lines and especially is this so where this angle has not previously been recognized. In routine history-taking of cases of asthma, hay-fever and urticaria, we are astounded by the large number who have more or less abdominal pain, gastric distress, and all those symptoms which Dr. Garrett has so ably protrayed. There is one point I would like to add to Dr. Garrett's paper and that is, that we should not wait for the manifest action of the diagnostic points of Henoch's purpura before starting allergic management of patients with abdominal pain or abdominal distress of one kind or another. Many of them may be without the whole syndrome, but do have intestinal disturbance along that line. The point to keep in mind is that it is better to try allergic treatment first in cases of chronic abdominal distress, and fail on it, than it is to try major surgery with failure. If you have to do major surgery later on, that is all right, but try to manage the case for two or three months along the line of allergic treatment, and if you have done no good, at least you have done no harm.

DR. R. O. BROWN (Santa Fe, N. M.): I should like to ask Dr. Garrett if he can suggest any method in differentiating between an allergic reaction which causes symptoms which are rather acute, with vomiting, abdominal pains, and so forth, and the type of trouble that needs surgical attention? I am not a surgeon, but have seen a good many cases in which surgery was

done where the results of the operation, judged by relief of pain and pathological examination of tissues removed did not bear out the necessity for the operation. It seems to me it is sometimes difficult to make a positive diagnosis of allergic reaction in time to do much good for the patient, if he also has to have surgery. I should like to ask Dr. Garrett also, what method he has found most satisfactory in testing for foods.

DR. F. D. VICKERS (Deming, N. M.): I should like to ask if the presence of allergic symptoms with abdominal pain contra-indicates removal of the appendix?

DR. GARRETT (closing): In reporting these cases, I wish to lay the most emphasis on diagnosis. Unless we study with more care the history of such patients as we have been considering, we are apt to overlook points in the history, which, if followed out, would lead to recognition of the allergic origin of the symptoms.

Of course it would be absurd to submit a patient, in an evident state of shock, with board-like abdomen, severe pain, to such an investigation. A patient with acute abdominal pain, localized tenderness, local muscle rigidity, and high leukocyte count, is manifestly a case for the surgeon.

But there are many times when there should be a reasonable doubt about the cause of the pain, where the indications for surgery are not so urgent; and here a careful history, with notes of hay-fever, asthma, sick headache, urticaria, and such allergic phenomena in the history of the patient or his family, may put us on the right track.

Dr. Brown brought up the differential diagnosis in cases of abdominal pain where allergy is suspected. In Case 4, the injection of 8 minims of 1:1000 solution of adrenallin give very marked relief from pain on several occasions. Other observers have reported sympomatic relief from adrenalin. Manifestations of allergy such as asthma are sometimes relieved by adrenalin.

Dr. Vicker's question: "Does the presence of allergic symptoms with abdominal pain contra-indicate removal of the appendix?" Decidedly not, In Case 5 of the series just reported, the man, during an attack, developed gangrene of the appendix, as proven at operation. The operation no doubt saved his life, but after removal of the appendix he continued having attacks of abdominal pain.

Dr. Alexander asked as to the importance of the blood picture in a differential diagnosis of these cases. I think if the blood picture is normal—that is, if the leukocyte count and differential are normal—it speaks decidedly in favor of the condition's being of allergic origin. A normal leukocyte count together with relief from pain by adrenalin, would, with the presence of an allergic history, be the two most important signs favoring diagnosis of allergic origin of acute abdominal pain.

PULMONARY SYPHILIS; REPORT OF A CASE.

R. B. HOMAN, Jr., M. D.
El Paso, Texas.

(Read before the El Paso County Medical Society, at El Paso, Texas).

Acquired syphilis of the lung is regarded as rare and seldom demonstrated short of the autopsy table. There is no specific symptomatology. The diagnosis cannot be made without collateral evidence of syphilis or a successful therapeutic test. On the case now presented, we believe we have evidence of syphilis and a fair therapeutic test.

Stokes divides pulmonary syphilis into three types: solitary gumma, diffuse syphilitic fibrosis, and possibly diffuse syphilitic broncho-pneumonia. Secondary involvement of the pleura may give rise to a true syphilitic pleuritis. Likewise syphilitic mediastinitis may or may not be present.

The symptomatology of syphilis of the lung may closely approximate that of tuberculosis. Productive cough, dyspnea, fever, blood-streaked sputum, loss of weight, night sweats, and gastro-intestinal symptoms, may occur. Stethoscopic examination of the chest may exactly simulate the signs of active tuberculosis. Softened gumma may give signs of cavitation. Pleuritic involvement may give rise to serous pleural effusion such as we have in the present case. In a case showing the above symptoms and physical signs it is necessary to have tubercle-free sputum over a considerable length of time in order to rule out tuberculosis. X-ray evidence may be confusing. Gumma may be mistaken for pulmonary neoplasm. Severe pain is common to both. Diffuse syphilitic fibrosis may be mistaken for non-tuberculous lung infection or pneumonoconiosis.

CASE REPORT

Patient: B. C., colored. Age: 38. Occupation: laborer. Married seven years; no children; wife has had no miscarriages.

Chief Complaint: Shortness of breath and rheumatism."

Since January, 1933, patient states that he has been so short of breath that he could not lie down except for very short intervals. As a result he has had to sleep in an arm chair, sitting up. If he became overheated while working, he would develop a paroxysmal cough producing a thick white sputum. The sputum has never been blood

streaked. This same cough developed if he tried to lie down more than fifteen minutes at a time. In the spring of 1933, he developed an acute pain in the right lower chest, which was relieved by hot applications in about an hour. Patient continued to work until March 8, 1934. He thought he had asthma. He had lost twenty-seven pounds during this period.

On March 8, 1934, he consulted a physician, who advised him that he had fluid in his right chest. About a pint of thin yellow fluid was removed. On the next day the doctor removed a quart of fluid. The aspiration was repeated on March 11, when another quart was removed. Dyspnea was slightly relieved, but patient still could not lie down to sleep. He began to regain his weight, however.

About April 10th, patient developed pain and swelling in the knuckles of the first finger of his right hand. He had had rheumatism twice before and decided it was returning. The arthritis rapidly spread to all the large joints and to the small joints of both hands. He treated this with hot applications, massage, and manipulation, but the pain and swelling were not greatly relieved. At this time he began to run a high fever and at times was delirious. A slight pitting swelling of the ankle developed one week before the examination.

Past History: Usual childhood diseases. Rheumatism of all the joints in 1923, at which time he was unable to work for two months. A doctor cured this with electric treatments. Again in 1929 he had a generalized rheumatism lasting three months, which cleared up following prolonged application of dry and moist heat and massage. He had gonorrhea in 1914, cured in about one week. At the age of about 16, he had a penile sore lasting about two weeks without treatment. He denies secondary eruption. Served in the U. S. Army for one year during the World War.

We first saw the patient on April 29, 1934. He was sitting in an arm chair, leaning forward slightly in order to breathe more easily. Dyspnea was severe, the inspiratory phase being the more difficult. He was not particularly cyanotic. He was perspiring freely, especially about the head and neck. A frequent severe pertussoid cough, productive of a thick white viscoid sputum, was an outstanding feature. The temperature was 102° F. and pulse was 116/m, slightly irregular.

An examination of the head and neck revealed rather injected sclera with moderate-sized pupils, which reacted sluggishly to light. The mouth was foul, the teeth were stained, and many of the uppers very loose. Pus could be pressed from the upper gum margins. Mucosa was pale. There were a few small lymph nodes palpable in the posterior cervical chain. The veins of the neck were prominent. Pharynx was negative. The breath was not foul. The elbow joints, knee joints, and ankles were swollen and acutely painful to active and passive movement. The small joints of both hands were similarly affected. Peculiarly, the wrists were not involved. The patient complained of pain on movement of the shoulders or the hips. He had great difficulty in reaching a standing position and walked with difficulty, assuming a stooped attitude. The upper arm could not be moved in any direction more than about ten degrees. There was slight pitting edema of the ankles.

The heart was found to be enlarged beyond the mid-clavicular line to the left. Pulse was 116/m, slightly irregular. There was a rough to-and-fro murmur at the apex transmitted into the left axilla. There was a soft systolic murmur at the aortic area. The aortic second sound was very distinct. Blood pressure: systolic 126, diastolic 70.

Expansion was diminshed markedly on the right side of the chest. Percussion over the right side of the chest revealed dulness to flatness in the lower half. Tactile fremitus was increased in the same area. Voice sounds were fairly loud and there was no whispered pectoriloquy. Numerous sibilant rales were heard over the right side, and over the lower half anteriorly and posteriorly there were many fine and medium-moist rales. The left chest was essentially negative. There were a few moist rales in the base posteriorly.

The abdomen was normal.

Urinalysis was negative. Sputum examination was negative for tubercle bacilli and has remained so on repeated examinations during the past five months. Red blood cells, 3,860,000; hemoglobin, 68 per cent; white cells, 8,900; polymorphonuclears, 55 per cent; lymphocytes, 30 per cent; Eosinophiles, 8 per cent; Monocytes, 3 per cent; transitionals, 4 per cent.

Under digitalis the heart responded nicely and the edema disappeared from the ankles. One week later, nine badly infected upper teeth were removed, following which there was a temporary flare-up of the arthritis. However, the fever became lower and the joints have gradually resumed a normal condition. The patient is free of pain and there is very little deformity and little limitation of movement.

When the patient was able to move about, an x-ray of the chest was made, showing a dense fibrous shadow involving the lower half of the right lung. Blood Wassermann on June 4, 1934, was 4 plus.

Antisyphilitic treatment was begun immediately. Thiobismal, grains 3, was given intramuscularly weekly for 12 doses. After the fourth dose, .45 gram neoarsphenamin was given intravenously and .6 gram was given weekly thereafter for seven doses. There were no reactions. The patient's condition became slowly better. His cough diminished, fever disappeared, dyspnea was not severe, and after two months of treatment he was able to lie down without discomfort. He was then given mercurosol, 5 c.c., intravenously for four doses, and placed on a saturated solution of potassium iodide, fifteen drops t. i. d., increased

gradually to thirty drops t.i.d. An iodide rash appeared after two weeks and the treatment was discontinued. He he has had no anti-leutic treatment for one month.

Digitalization has been maintained. Pulse is now 78 per minute, temperature normal, blood pressure: 110/60. The patient now weighs 123¾ pounds—a gain of about 12 pounds. His normal weight is 135 pounds. A slight hacking cough makes its appearance only on exertion. Blood Wassermann Oct. 5, 1934, negative.

In spite of the physical improvement and the decrease in moisture in the chest, the x-ray reveals little if any change in the shadow in the right base.

We believe we are safe in making the following diagnoses in this case:

Pulmonary lues
Acute rheumatoid arthritis, multiple
Mitral stenosis and insufficiency
Aortitis, syphilitic
Congestive heart failure.

PUBLIC HEALTH NOTES

J. ROSSLYN FARR, DR. P. H.
Director, New Mexico State Bureau of Public Health.

LESSONS FROM INDIA

What effect has self-government upon public health administration? A controversy in the (London) Times may throw some light on this topic. The Times correspondent[1] reports that since the Montagu-Chelmsford reforms, progress in public health has been evident throughout the country. More money is spent on public health, there are more health officers, more children are vaccinated, maternity and child-welfare work is active in Provinces wherein it was neglected up to 1919, and so on.

Mr. C. L. Dunn[2], a former director of public health, writes to protest that if the health officers are increased in numbers they are so badly deteriorated in professional qualifications that the end result is a net loss. In public health engineering especially, he says, the lowering of professional standards has been disastrous. Waterworks are continually breaking down, even in important cities, and nuisances caused by defective drainage are almost unbelievable.

It looks rather as though Mr. Dunn were amongst those who have lost their jobs. But I doubt if we should be right in attributing his criticism wholly to prejudice. Lowering of professional standards is the most likely disease to attack public-health administration in a democracy. We need not conclude that self-government is a failure. Dictatorship and bureaucracy, though they facilitate efficiency, have their own serious limitations. But I believe we may take warning that, in a democracy, administration must be supported by education. It is not enough that the people desire health work, they must know the difference between a trained public servant and an amateur, they must be sensitively aware of the danger of using public office as a reward for political service.

TREATMENT OF GONORRHEA

In the September number of V. D. Information, Dr. P. S. Pelouze[3] analyzes the results of treatment in 283 cases of gonorrhea. Of these, 183 were seen by him for the first time after the fifth day of the disease. In all but twelve of these the posterior urethra was involved when first seen and only two escaped this involvement. Whereas, among 100 cases seen before the fifth day and placed under treatment, sixty-eight cases escaped infection of the posterior urethra. The author does not discuss the possibility that those coming for advice late may be a selected group including some men who would never have consulted him unless the posterior urethra had become involved. But even allowing for this possibility, Dr. Pelouze's success in controlling the spread of infection is sufficiently striking. He emphasizes the importance of gentle handling of the infected anterior urethra. No injection is given beyond the bulbo-membranous junction. He also emphasizes the great importance of securing the cooperation of the patient, who will nullify all his physician's efforts by indulging in alcohol or in sexual excitement. Average length of treatment was for anterior cases 5.6 weeks, for posterior cases 18 weeks. Dr. Pelouze's text book (1932 edition[4]) is in our library and may be borrowed by anyone who is interested in studying the details of his methods.

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PRESIDENT ROOSEVELT'S COMMITTEE ON ECONOMIC SECURITY

The entire medical profession of the country is keenly concerned about what will be the trend of the first report of the Committee on Economic Security, which will be made to the President about December 1, and will be released to the public soon thereafter.

Their interest is all the keener because the Executive Secretary of this Committee, Prof. Edwin E. Witte, has not always shown himself sympathetic with the aims and purposes of the American Medical Association. In a letter received from Professor Witte, by the Association, under date of October 13, the following information was submitted:

1. The Director of the Bureau of Medical Economics of the American Medical Association will be invited to go to Washington to discuss "the economic aspects of the problems of medical care of people in very low income groups."

2. The Medical Advisory Committee now being organized will be composed of physicians selected on an individual basis. At the time Professor Witte's letter was written, not all of those who had been invited to serve on the Medical Advisory Committee had replied.

3. The names of the prospective members of the Medical Advisory Committee would not be disclosed. (In a letter received from Professor Witte under date of October 22, it is stated that he hopes "to announce the Medical Advisory Committee in the very near future," and that he is "planning committees of consultants in the fields of dentistry, hospital management and public health."

4. The Committee on Economic Security will be glad to have suggestions from the American Medical Association or its officers on any phase of its work at any time. (It is presumed that the Committee will likewise welcome suggestions from state medical associations or from the officers of those organizations.)

5. Professor Witte will make an effort to visit the offices of the American Medical Association "shortly before the New Year."

6. The assurances of cooperation extended by the Board of Trustees and officers of the American Medical Association are sincerely appreciated.

It is stated that the President of the American Medical Association (Dr. Walter L. Bierring), the President of the American College of Surgeons (Dr. R. B. Greenough), and the President of the American College of Physicians (Dr. Jonathan C. Meakins) have all been invited to serve as members of the Medical Advisory Committee. However, as stated in Professor Witte's letter, these men have been invited to serve as individuals and not as representatives of their respective Associations.

The conferences over this matter are now being held in Washington, and for this reason Dr. R. G. Leland, Director of the Bureau of Medical Economics, was compelled to cancel his appointment for the El Paso meeting, in order to participate in these conferences.

Doctors throughout the Southwest are asked to consider carefully the following announcements from the American Medical Association:

It seems quite probable that no hearings on sickness insurance will be held under the auspices of the Committee on Economic Security. It is, of course, presumed that if any bill providing for sickness insurance is submitted to Congress, official hearings will be held by the committee to which such bill will be referred.

Since the American Medical Association and many of its constituent medical associations have gone on record in opposition to sickness insurance, it is extremely desirable that the views of the organized medical profession should be made known to members of Congress and to candidates for election as members of that body. It is suggested, therefore, that the officers of constituent state medical associations and of component medical societies and the members of the legislative committees of these bodies immediately develop plans for acquainting members of Congress and candidates for election to that body with the expressed official views of the organized profession in the United States pertaining to sickness insurance. Most

of the members of Congress and all the candidates for election *are now at home.*

In the meantime, an earnest effort will be made further to inform the Executive Director of the Committee on Economic Security and the members of that Committee concerning the official attitude of the American Medical Association with respect to sickness insurance and the basis of the Association's opposition to any plan involving governmental control of medical practice.

CECIL CLAIR DAVIS

(Albuquerque)

The Bernalillo County Society and the New Mexico Medical Society lost a valued member in the death on July 31 of Dr. Cecil C. Davis, at the age of 43, the cause assigned being hypertension, myocarditis and uremia. Dr. Davis graduated from George Washington University School of Medicine, Washington, D. C. in 1918. In Albuquerque he practiced the specialty of tuberculosis.

SOME ETHICAL MEDICAL ADVERTISING

If we make frequent comment about the activities in medical circles in Santa Cruz County (Ariz.) it will be because they HAVE activities and also because they report them to the editor. We cannot make comment about things of which we are not informed.

We have had brought to our attention by the Santa Cruz County Medical Society, the series of advertisements carried by the Mission Drug Company of Nogales (E. S. Edmonson, Proprietor), in the Nogales Herald. One which speaks for itself is the following:

You admire honesty in other people; why not be honest with yourself?

When you find that your system is not functioning properly, why will you persist in telling yourself that it does not amount to anything until you are forced to bed?

Common sense will tell you that a visit to your doctor when your first symptoms arrive will often enable him to prevent serious illness.

These are trying days when a slight cold may develop into pneumonia, so why gamble with a life you cannot replace?

Consult your doctor. If your ailment is of little consequence it is cheap insurance and if it is serious his help is not to be figured in dollars and cents.

During the campaign for the Basic Science Law and also during the more recent fight against the Naturopathic Referendum, Mr. Edmonson used his advertising space freely in giving sound advice to the public on these matters. In the end, a drug store (if it is a drug store and not a combination lunch counter, saloon, cigar stand and general notion shop) must look to the medical profession for patronage. The medical profession, on its part, can well afford to send patronage to those druggists who pursue their calling as a necessary adjunct to the practice of medicine.

THE EL PASO COUNTY MEDICAL SOCIETY.

September 24, 1934.

(Reported by Dr. Leslie M. Smith, Secretary)

Program: Case Reports.

1. What Is Early Tuberculosis? Case Illustrations. O. Egbert, M. D., El Paso, Texas.
2. Case of Peri-pancreatic Abscess with Autopsy. J. L. Murphy, M. D., El Paso, Texas.
3. The Use of Theelin in Diabetes Mellitus. Mott Rawlings, M. D., El Paso, Texas.
4. Case of Eczema Due to Drinking Water. L. O. Dutton, M. D., El Paso, Texas.

The El Paso County Medical Society met Monday night, September 24th, at 8 p. m. at Hotel Hussmann.

Dr. Egbert emphasized the cases of tuberculosis appearing after acute respiratory diseases. He stated that every case of pneumonia should be carefully studied after the acute symptoms have subsided. Many cases of tuberculosis begin this way. Dr. W. W. Waite cited similar cases. Dr. Ralph Homan stated that he thought such cases to be exacerbations of dormant infection rather than incipient cases.

Dr. J. L. Murphy reported a case of peri-pancreatic abscess, with a report of the autopsy findings. The pancreas was intact. There was a mass of necrotic tissues between the head of the pancreas and the deudenum. Dr. W. W. Waite discussed the autopsy findings.

Dr. Mott Rawlings discussed the recent work on the effects of the various glandular substances and hormones. He reported a case of diabetes of five-years' standing with a blood sugar of 200 mg. Theelin was used to help control the condition and was continued to supplement the use of insulin. With this treatment less insulin was necessary. Dr. Robert Thompson discussed the case.

Dr. L. O. Dutton reported a case of eczematous eruption associated with chronic ringworm of the feet, which was apparently influenced by some constituent of the drinking water of the locality in which the patient lived. The case was discussed by Drs. Leslie Smith, J. A. Rawlings, Mott Rawlings, and George Turner.

Dr. W. H. Vandevere reported a case of grass burr on a vocal cord. The burr was removed through the bronchoscope.

Adjournment was at 9:35 p. m.

Executive committee: Dr. Sutton was allowed up to $100.00 for scientific exhibits. Dr. Ralph Ho-

man as allowed up to $100.00 for trip in connection with the relief work.

October 22, 1934.

Program: A Review of 268 Appendectomies, S. H. Newman, M. D., El Paso, Texas.

Case Report: "Weak spells. Why?" G. Werley, M. D., El Paso, Texas.

The El Paso County Medical Society met October 22 at 8 p. m. at Hotel Hussmann.

Dr. Newman gave an analysis of 268 appendectomies at the El Paso City-County Hospital. He demonstrated tables which illustrated the lower mortality of early operations and the gradual rise in mortality the longer operation is delayed. The average operative mortality in the United States is over 10 per cent. Dr. Newman stressed the fact that the general practitioner who first sees the case should insist upon early operation. The paper was discussed by Drs. E. B. Rogers, B. F. Stevens, F. D. Garrett, J. E. Cummins, J. L. Green, T. J. McCamant, W. W. Waite, and W. R. Jamieson.

Dr. Werley reported a case of robust man of middle age who suffered from periodic attacks of extreme weakness. Between attacks, the patient felt well. Examination by Dr. Gorman revealed an absence of free hydrochloric in the gastric contents but otherwise no great abnormality. Dr. Werley considered that there was an element of fear acting in the causation of the attacks, and, by restoring the patient's confidence in his physical condition, was able to overcome the trouble. The case was discussed by Drs. J. J. Gorman, N. H. Keller, S. D. Swope, E. C. Prentiss, and F. D. Garrett.

Dr. R. B. Homan spoke on a proposed amendment to the state constitution to be voted on in November, giving his objections to the amendment.

The meetings adjourned at 9:50 p. m.

ARIZONA STATE MEDICAL ASSOCIATION PROCEEDINGS

(Continued from September Issue)

Scientific Session

The meeting was formally opened at 10 a. m., when called to order by the President, Dr. H. A. Ingalls (Roswell), who then introduced the incoming President, Dr. C. F. Milligan (Clayton). Dr. Milligan expressed his appreciation of the honor in being chosen president for the year and in succeeding such a distinguished gentleman as Brigadier-General Ingalls. Dr. Milligan then delivered his inaugural address, which has been published in a previous issue of this journal.

Dr. F. D. Garrett (El Paso, Texas), the first speaker on the scientific program after the induction into office of President Milligan, in a paper entitled "Allergic Reaction—An Important Cause of Abdominal Pain," cited a group of cases manifesting important abdominal symptoms in which the allergic origin is often overlooked. His conclusions were summarized:

"Abdominal symptoms, especially abdominal pain, may be caused by allergic reactions.

"The presence of one or more of the allergic signs, or the history of them, in connection with abdominal pain and distress, should give rise to investigation.

"The nature of allergic reaction in the abdominal viscera is such that it may lead to serious complications and to urgent demand for surgery. On the other hand, radical abdominal surgery on such patients, done for apparently good reasons, especially for removal of the gallbladder, may be disappointing."

Discussion, opened by Dr. L O. Dutton, El Paso, Texas, was participated in by Dr. R. O. Brown (Santa Fe), Dr. F. D. Vickers (Deming), Dr. H. S. Alexander (Santa Fe), and closed by Dr. Garrett.

The next speaker, Dr. John H. Vaughn (Amarillo, Texas), in a paper on "Cancer," illustrated with lantern slides, urged early recognition and treatment, stating that "one big obstacle to early treatment is in our profession. So often we do not recognize cancer until it is in the stage where the layman can diagnose it himself. Those in the profession who come in contact with many cancer cases should go to the trouble and expense of making lantern slides to show, not only to our profession, but to the laity through the Parent-Teachers Associations or other organizations."

Discussion was opened by Dr. R. O. Brown (Santa Fe), participated in by Dr. A. E. Winsett (Aamarillo,Texas), Dr. W.W. Waite(El Paso,Texas), Dr. A. C. Scott (Temple, Texas), Dr. Frank H Austin. (Carlsbad, N. M.), and closed by Dr Vaughn.

Recess for Luncheon

Luncheon as guests of the New Mexico State Insane Asylum provided a pleasing and interesting diversion. After an excellent repast, Dr. A. B. Stewart, the host, opened a round-table discussion on syphilis, presenting, from among the inmates of the institution, patients in various stages of the disease. Dr. Stewart suggested that every case of specific disease should be reported by name and that, as soon as a patient failed to report to his attending physician for treatment, the name should be turned over to the State Health Department, the person should be apprehended and compelled to resume treatment.

Dr. H. S. A. Alexander (Santa Fe) reviewed some of the findings of Dr. Walter Clarke, of the staff of the American Social Hygiene Association, who recently conducted a survey in an endeavor to estimate the amount of unrecognized and untreated syphilis in several counties of the State. In the first census, namely a questionnaire, sent to all doctors and hospitals within the state, it was found that eighty-eight per cent of physicians returned this, showing a total of 1,831 cases of venereal disease under treatment, of which 1011 were

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syphilis and 820 gonorrhea. Basing his calculations then on the reported cases and on the actual number of positive Wassermanns found during the various surveys. Dr. Clarke estimates that only about one-twentieth of the actual number of cases are under medical treatment. "Since it is estimated that nineteen out of every twenty cases receive no treatment whatever, the question arises, what can be done to remedy this unsatisfactory state of affairs? One answer is that the United States Public Health Service has offered to send to the State a full-time officer of the Service to take charge of popular health education with a view to convincing the public of the importance of consulting a physician in regard to venereal infection. They ask only that the state will insure the necessary travel expenses and clerical aid and the availability of the necessary drugs for those individuals who are unable to contribute towards their treatment. This offer will be presented to the next session of the New Mexico Legislature and it is to be hoped that it will be sympathetically received."

Dr. A. W. Raphael (Santa Fe) brought the discussion to a close by citing changes in the brain and meninges as shown at autopsy.

Afternoon Session

The afternoon session was called to order at 2 p. m., by the president, Dr. Milligan. The first speaker, Dr. M. K. Wylder (Albuquerque) chose as his subject "Prevention of Heart Disease in Children," and advised that "in order to attack the problem of prevention of heart disease, the study of etiology becomes the paramount question. Most heart conditions will fall into the following classes: the congenital, the infective, the syphilitic, and the heart due to the involutional changes of age. Prevention of the congenital type becomes a prenatal problem, and there is no question whatever but that, with intelligent supervision of the expectant mother, a much higher percentage of normal babies can be produced. To eliminate infective carditis, we have to get rid of rheumatic fever and the infections of the strepetococcus fever and the infections of the strpetococcus group." Dr. Wylder concluded with a quotation from Dr. Leo Frankel: "Whenever we can adequately protect the child against bacterial invasion, when we can give him clean heredity, when we can teach him personal hygiene and give him a proper mental attitude, freedom from care and worry, and opportunities for rest and recreation, we shall have entered that newer campaign which spells the postponement of disease and the promotion of physical, mental, and moral health."

Dr. W. W. Waite (El Paso) opened discussion of Dr. Wylder's paper, followed by Dr. C. F. Milligan (Clayton), Dr. H. A. Miller (Clovis), Dr. F. D. Vickers (Deming), and Dr. Wylder, closing.

The next speaker, Dr. F. H. Heller (Pueblo, Colo.), presented a paper entitled "Clinical Classification and Treatment of Nephritis," in which he advised that "it is essential that a classification of Bright's disease be made upon which the living patient with a renal lesion may be fitted, and on its background, proper diagnosis and rational treatment instituted." Of many classifications designed, Dr. Heller chose the one by Addis, as modified by Van Slyke, because "it is entirely a clinical classification based upon the onset, clinical course, physical examination of the patient, and laboratory findings, especially the study of the urine.

"CLASSIFICATION BRIGHT'S DISEASE (ADDIS):

I. HEMORRHAGIC:
   Acute-latent-healed.
   Chronic-active-terminal.
II. DEGENERATIVE:
   a. Cryptic lipoidal nephrosis.
   b. Poison of known composition.
   c. Toxemias of pregnancy.
   d. Toxemias associated with general infection.
   e Toxemias of focal infection.
   f. Toxemias associated with mixed infection.
III. ARTERIOSCLEROTIC:
   Benign.
   Malignant."

Dr. Heller's paper was discussed by Dr. R. O. Brown (Santa Fe), opening, followed by Dr. Frank H. Austin (Carlsbad), Dr. M. K. Wylder (Albuquerque), Dr. N. D. Frazin (Silver City), and the discussion was closed by Dr. Heller.

Dr. G. Heusinkveld (Denver, Colo.), then presented a paper on "Some Problems of Obstetrics," in which, after a careful review of the mechanism and the nature of the dilatation of the cervix uteri and the expulsion of the uterine contents, he discussed inertia uteri, toxemias of pregnancy, subinvolution of the uterus, and other problems, and advised methods of treatment.

Discussion was opened by Dr. L. O. Dutton (El Paso) and closed by Dr. Heusinkveld.

The proceedings of the day were concluded with a paper by Dr. A. E. Winsett (Amarillo, Texas) on "The Schilling Blood Count," or "The Significance of the Blood Picture in Acute Surgical Infections." Dr. Winsett advised that "one single blood count does not always give a great amount of information. A number of factors must be taken into consideration; particularly, the general clinical picture the patient presents and the time, as regards the course of the infection, at which the count is made. Repeated counts made at intervals of several hours, however, give us information which not only aids in the diagnosis, but the prognosis as well." He urged that one should thoroughly familiarize himself with the five types of leukocytes found in normal blood—the lymphocytes, endothelial leukocytes or monocytes, basophils, eosinophils and neutrophils—as well as the four types of neutrophils (myelocytes, juvenile, stabs and segmented nuclears) described by some, which are found in disease, and that one

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should hesitate to base diagnostic conclusons unless the normal has previously been determined for that individual

Discussion of Dr. Winsett's paper was opened by Dr. R. O. Brown (Santa Fe) and then closed by Dr. Winsett.

Adjournment until 9 a.m. July 20, 1934.

Second Day, July 20, 1934
Morning Session

After call to order by the President, Dr. C. F. Milligan (Clayton) at 9 a.m., the morning scientific program was opened with a paper by Dr. J. W. Kennedy of Philadelphia, Pa.—"Indications for Vaginal Hysterectomy with Clamps." Dr. Kennedy quoted the assertion of the late Dr. Joseph Price, made some thirty years ago: "Vaginal hysterectomy, clamp method, has the broadest field of usefulness of any pelvic operation, has the lowest primary mortality of any major operation in surgery and has the best postoperative history of any operation to my knowledge." In summarizing, Dr. Kennedy concluded: "We must advance as a solid phalanx for better obstetrics. We must prevent malignancy of the uterus by diligent care and treatment of the precancerous lesions of the cervix and birth canal. In the treatment of malignancy of the uterus we must give the profession a remedy to which the greatest number have access. The remedy must be sufficiently thorough to cope with the condition and it must have a low mortality primarily, in order that it may be resorted to early with little fear of outcome. A high operative mortality in any condition drives patients to a later operative hour. We recommend the simple cautery and vaginal hysterectomy, clamp method, for removal of the uterus in all conditions where such is possible and removal of the uterus is indicated. It is my opinion that vaginal hysterectomy, clamp method, is the solution for malignancy of the uterus at this hour."

Discussion was participated in by Dr. Harry Wear (Denver), Dr. F. M. Howe (Las Vegas), and closed by Dr. Kennedy.

Dr. Harry Wear, Instructor of Urological Surgery, University of Colorado, Denver, Colo., then spoke on "Transurethral Prostatic Resection," concluding: "Transurethral resection on properly selected cases, and properly performed, may be considered a minor surgical procedure. Therefore, this method is becoming more popular because of the relief given a poor operative risk. It will never supplant suprapubic prostatectomy for those cases showing enormous hypertorophy where there are such complications as urethral stricture, bladder stone, tumor and diverticulum. The percentage of recurrence cannot be tabulated at this time because a sufficient period has not elapsed since this operation became so genera ly adopted. The popularity of this operation during the past three years has probably increased because of the short period of hospitalization requisite to good end results."

Discussion was opened by Dr. Robert F. Thompson (El Paso), and closed by Dr. Wear.

Dr. J. A. Britton, Associate Professor of Medicine, Northwestern University, Chicago, Ill., next speaker, in a paper on "Silicosis," emphasized points in diagnosis, stating that the "silicosis racket is becoming a national scandal. Legitimate industry is being blackmailed; honest workmen are being ruthlessly exploited—and all for the financial advantage of a few unscrupulous lawyers." Dr. Britton concluded: "There is no question but that there have been and are now positive cases of disability due to the inhalation of silica dust. There is also no question about the general health of industrial workers being better today than it has ever been. Occupational diseases in general, and silicosis in particular, are being aggressively studied in every part of this country. Just as, in the safety-first movement, the elimination or guarding of accident hazards was the key-note of its program, so the control of dusts and other unhealthful products of modern industrial processes is one of the principal jobs of the industrial engineer. This is the only effective treatment for a condition which is potentially a producer of silicosis. Little is there for the doctor to do after there is unquestioned disability. He can point to the results of a certain kind of exposure and can suggest the necessity for prevention. If his observations are accurate and conclusive, his advice should be of great help in eliminating occupational health hazards and preventing the development of new cases of dust disease."

Discussion, opened by Dr. W. W. Waite (El Paso, Texas) was participated in by Dr. R. O. Brown (Santa Fe), Dr. L. O. Dutton (El Paso), and closed by Dr. Britton.

A paper by Dr. R. S. Johnson, Chief Surgeon, A. T. & S. F. Hospital, La Junta, Colo., on "Traumatic Emboli," concluded the morning program. Dr. Johnson discussed the subject from a surgical standpoint, considering only the commonest agents—thrombi, air, and fat, and the effect of their lodging in the lungs, coronary arteries and the brain. He spoke of the symptoms, source, pathology, incidence and treatment, and portrayed different types of cases which had come under his care.

Discussion was entered into by Dr. C. W. Mayo (Rochester, Minn.), Dr. W. W. Waite (El Paso, Texas), and closed by Dr. Johnson.

Recess at 12:00 noon for luncheon as guests of the Board of Directors of the Las Vegas Hospital, at the North Methodist Church. After luncheon was served, Dr. Carl Buck, D.P.H., New York City, Field Director, American Public Association, addressed the Society on "The Medical Profession and Public Health in New Mexico."

(To be continued)

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BOOK REVIEWS

MANUAL OF DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTIAIONERS. By Charles H. May, M. D., Director and Attending Surgeon, Eye Service, Bellevue Hospital, New York, 1916 to 1926, etc. Fourteenth edition, revised, with 376 original illustrations, including 25 plates, with 78 colored cifures. Wm. Wood and Co., Baltimore, 1934, cloth $4.00.

This manual has long been recognized as a satisfactory text on diseases of the eye for students and practitioners, and has had wide use, as indicated by its many editions and translations into many languages other than English. The work is not intended as a substitute for more voluminous works, such as might be required by specialists, but is a very concise and practical presentation of this subject. H. P. M.

THE MERK MANUAL OF THERAPEUTICS AND MATERIA MEDICA. A Source of Ready Reference for the Physician Compiled and published by Merck and Company, Inc., Rahway, N. J., 1934, $2.00.

This concise reference hand-book, covering the essentials of diagnosis and treatment, contains a wealth of material. This, the sixth, edition includes several new subjects and numerous new remedies and indications for their use have been listed at the end of the various chapters. This volume will be very helpful to the physician who sees certain of the conditions only occasionally and wonders what the latest remedies for them may be. The value of the information contained is great as compared with the relatively small cost.

H. P. M.

I KNOW JUST THE THING FOR THAT! By J. F. Montague, M. D., Medcal Director, New York Intestinal Sanatorium. Cloth, $2.00, 265 pp. John Day Company, New York, 1934.

This book that any doctor might safely recommend to his patients as a sane and common sense treatise upon many of the more common complaints which are heard by the doctor and for which sure cures are touted over the radio broadcast and in magazine advertisements. In this frank, cleverly written presentation, the fallacies and dangers of self medication in general and of certain well-advertised remedies in particular are given in an entertaining manner. To the laymen who will know the facts regarding many of these "sure cures" this is a sueful book.

H. P. M.

THE POWER TO LOVE, A PSYCHIC AND PHYSIOLOGIC STUDY OF REGENERATION By Edwin W .Hirsch, B. S., M. D., Associate in Urology, College of Medicine, University of Illinois. $4.00 net. Alfred A. Knopf, New York, 1934.

The title of this book is confusing unless it is understood that the author is dealing with "love" in its physiological and neurological aspects. It is stated to have been written for the layman and primarily for men, but in reading the book the question frequently presents itself as to whether the layman would understand and be adequately directed. Perhaps the book's greatest usefulness would be attained by being in the hands of the general medical practitioner through whom the information could be conveyed to the patient and the suggestions and directions varied according to the patient's individual problem. H. P. M.

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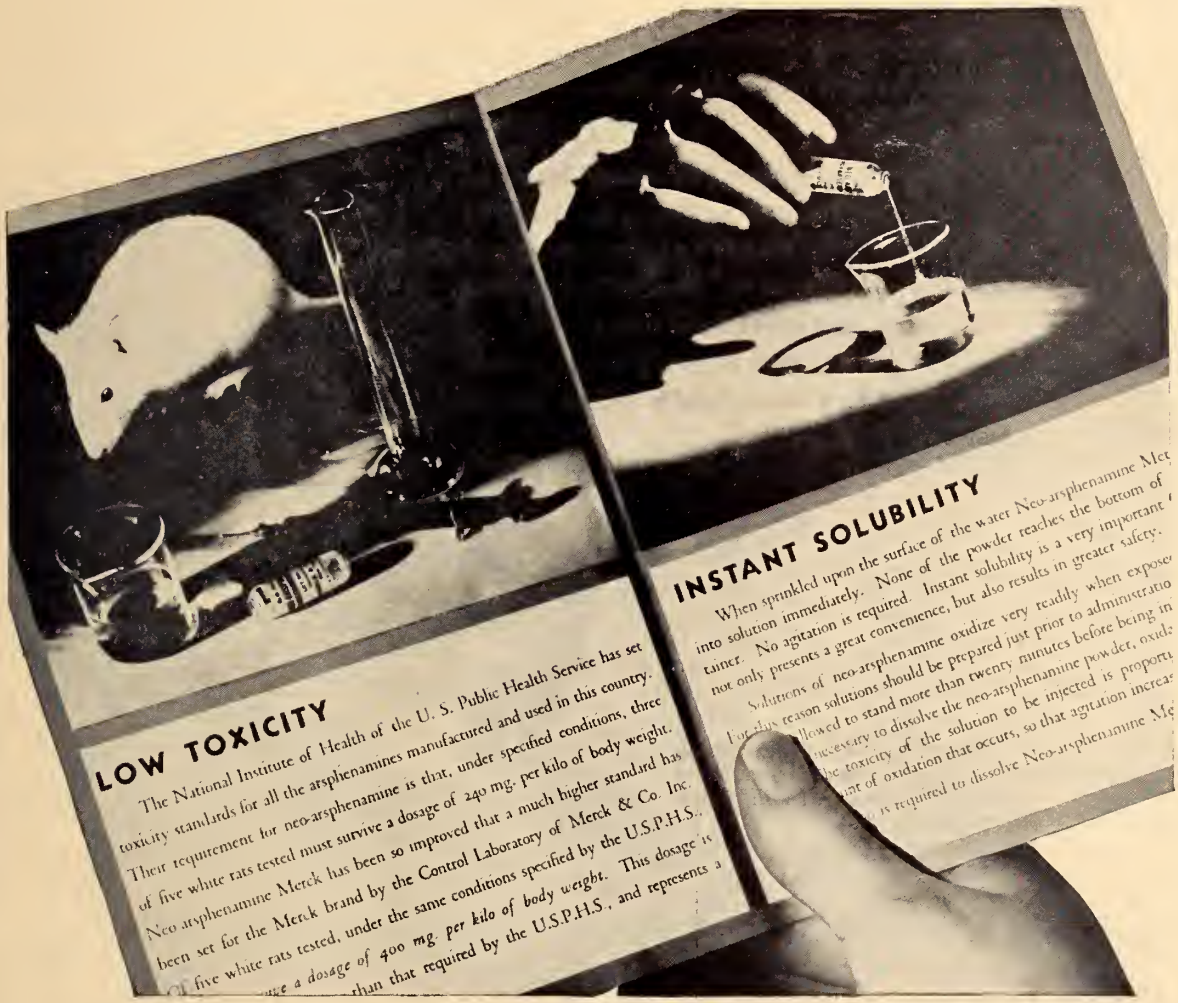
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SPECIAL PHASES OF MEDICAL ECONOMICS

HOLMAN TAYLOR, B. S., M. D.

Fort Worth, Texas

(Delivered before the Twenty-first Annual Meeting of the Medical and Surgical Association of the Southwest, held in El Paso, Texas, November 22-24, 1934).

As my title would indicate, I am not to attempt a complete discussion of the large problem of medical economics, but rather to point to a number of phases of the subject which should be considered in its study. Manifestly, a development of each of these phases, and a discussion of the numerous related matters, would consume much more time than is available for the purpose on this occasion.

IN THE BEGINNING

In the beginning, the practice of medicine was an avocation and not a vocation. The priests of the early church, of whatsoever character, undertook to extend moral, mental, and physical relief, along with and in the name of religion. When people were in trouble, they went to their priests, or religious leaders, by whatever title, no matter what the character of their troubles might be. Thus the practice of medicine partook of superstition and religion, in large and interchangeable proportions. There probably was not much difference in what was done for the petitioner, whether his trouble was mental, moral, or physical. Perhaps, were we to look closely, we might find in the practices of the early days much of that species of therapy taken advantage of by our friends the christian scientists, and the followers after the several varieties of new thought involving cure by prayer. Naturally, there was no charge for this service, and we may pause long enough to say that here the analogy with the christian scientists and that ilk, ceases. The priests were supported by the church, and the church was supported by contributions, sometimes voluntary and sometimes forced, of members or followers of the church. If there was any pay at all, it was by way of an honorarium, the supplicant giving what he could afford, in gratitude for service rendered. Certainly there was no fee for specific service, whether medical or otherwise.

In the course of time, the priests discovered many practical procedures in the relief of pain and sickness, and thus medicine was gradually developed into a profession. The demands made on those priests who had become expert at rendering medical relief was so great that they taught others to perform these functions, and perhaps themselves became the predecessors of the specialists in medicine. They were specialists in relief. Presumably the honorarium was still the thing. It was difficult to divide the service into such definite acts as to enable the practitioner to fix a fee. Above and beyond this consideration, it was not possible to evaluate, in terms of money, or what was used for money, services such as those involved. The medical fee was probably in the beginning merely a yardstick for measuring the proportion of the income of the patient which should be paid to the physician as an honorarium. As a matter of fact, it has remained just about that, through all of the ages. There is today very little more opportunity to evaluate medical service in terms of money and upon a fee basis, than there was in the beginning.

THE MEDICAL GUILDS

In the Middle Ages vocations of every sort were, as a rule, governed by self-controlled

organizations known as guilds. These guilds controlled every phase of the several vocations concerned, and pretty much in their own way. Among these guilds, perhaps the most thoroughly organized and most successful was the Medical Guild.

Dr. Richard E. Scammon (Ph. D.) of Minneapolis, Dean of Medical Sciences in the University of Minnesota, has made a study of these guilds, in the course of his researches in the field of medical economics. He advises us that the Medical Guild was very similar, indeed, in its purpose and management, to the medical societies of today, the principal and almost the only difference being in the amount of control over admission to the practice of medicine that the guilds maintained in their day. He goes into detail in comparing the organization of the profession in that early day with that of today.

In those days a physician was not permitted to advertise, while the members of other guilds were permitted to engage in public competitive claims for patronage or business. In medicine in those days, the art and technic of the guild was free to all members thereof, whereas these things on the outside were generally trade secrets. The surgeon who discovered a superior method or technic of operation would not consider holding his discovery to his own exclusive advantage. It was his privilege to advise his colleagues. The same applied to every other phase of medical practice. It so applies today. There is no patent office protection for the discoverer of secrets in medicine, and there never has been anything of the sort. The guild provided for the training of young men in the practice of medicine, and passed to them the necessary information, without cost and without obligation other than the obligation to protect the guild. The principles of medical ethics as we know them today, had their inception in the rules and regulations of the guild. Thus the conduct of the physician is absolutely under control. It was so in the day of the guild, and the same is true today. Competition is not the life of trade in medicine, and never has been. Cooperation has taken its place.

As Dr. Scammon points out, the Medical Guild is the only guild to survive the more than five centuries of epochal changes in civilization. It passed unscathed through the commercial revolution of about 1600, and through the industrial revolution of 1750 to 1830. It has practically kept its original form. The reason this has happened, according to Dr. Scammon, is two-fold: First, there is and always has been a personal relationship between physician and patient which has not existed elsewhere—except, possibly, in the church. The importance of this personal relationship has always been accentuated, and we find it necessary today to rely upon it for the protection of our modern Guild of Medicine. In the second place, each medical problem is biologic, and therefore does not permit of the codification and price-fixing so characteristic ofo modern business. It has happened, therefore, that the agencies so destructive of other guilds have not been able to destroy this one because of this core of steel we call personal relationship.

The Medical Guild of old protected its members from exploitation either at the hands of their fellow members or from the outside; it sought constantly to improve its services, without regard for remuneration, and it rigidly controlled its membership. Do the medical societies of today, representing the Guild of Medicine, do these things? Very largely they do. They could easliy be converted into guilds, and the guilds easily modernized. The one lacking element is control over "membership," which in ancient times meant the right to practise medicine. We can and do control our membership today, and we require our membership to adhere to the Principles of Medical Ethics, but we have no direct control over entrance into the practice of medicine. We do, as a matter of fact, exercise a vicarious control of entrance into medicine through our influence in requiring medical colleges to maintain the highest educational standards, but that is hardly sufficient. Physicians are entering the practice of medicine greatly in excess of the increase in population. So far as can be seen now, in a democratic country, there is little prospect of reducing this increment except, possibly, through the medium of the guild idea.

MODERN MEDICINE

Medicine came into its own as an art and a science almost within our day. Throughout the world, medicine has within recent years become essentially a science, and the art of

medicine has increased during these years by leaps and bounds. In this period of fruition, the medical fee supplanted the medical honorarium. The world has become commercialized. The professions perforce spoke in terms of the world. Many of us can remember the day when many of our dignified and revered physicians considered it unprofessional to name a fee for a service rendered. They preferred the honorarium, even to their own financial hurt.

The fee system in medicine has not had the easy sailing that it has had in business and other vocations. It has never been possible, as has already been said, to determine the worth of medical service in the coin of the realm. Some years ago, over in East Texas, wood was sold at so much per load. It did not make much difference about the size of the load, but people would not buy wood from a man who gave them less wood than they paid for. It has been rather that way in adjusting charges in medicine. By common consent, the idea that the laborer is worthy of his hire and that the physician must be maintained in the community in order that he may serve the community, has persisted, particularly in rural districts. It has been understood all along that, even as the rain falls on the just and the unjust, so also must those who are able to do so pay the cost of medical service for those who are not able to pay. The attempt to adjust the distribution of medical services under these conditions has brought about a situation which will be discussed presently.

Because of the many discoveries and rapid advances in scientific medicine, and the division of the medical field into specialties, medicine speedily became most complicated, indeed. Whereas the physician had previously himself attended to practically all of the medical wants of his patients, he now felt it incumbent upon him to give his patients the extra and expert services thus made available. The clinical laboratory, including radium and x-ray, the diagnostician, the surgeon, the refinement of hospital service, and the like, had made the practice of medicine very expensive, so expensive that those in the lower financial brackets, particularly if there was much sickness, could not pay the bills. Ordinarily, an individual seeking an automobile would make his purchase in accordance with the funds available. The public had become so accustomed to the ultimate in medical service that when medical service was required nothing short of the very best was acceptable. The doctor felt the same way about it. It had been his province and his pride that his clientele be well cared for. The best was none too good. The idea became prevalent that each individual was entitled to the best medical service procurable. What was really meant was that each individual was entitled to adequate medical care, not necessarily the best; but neither the medical profession nor the public has made this distinction.

While these general observations are true as respects modern medicine, there is and has all along been a vast difference between medicine as practised in Europe and as practised in this country. So different, indeed, have conditions been, that comparison is hardly possible. Standards of living in Europe are not comparable to those in America. Even the great middle classes in Europe do not expect, for instance, to own automobiles or radios, and hot running water and bath-tubs are, to say the least of it, not found in the average home. Neither do the people in those countries expect the sort of medical service the people of America expect. They can not pay for such service, any more than they can pay for automobiles and gasoline and the other modern advantages rather common in this country. This is a fact and should be borne in mind in the comparisons made in our attempt properly to distribute the costs of medical care.

SOCIALIZED MEDICINE

Allegedly in their effort to make modern medicine serve the whole people and at a cost the people could afford to pay, certain European countries, led by Germany and Austria, many years ago organized mutual-aid societies for the purpose of furnishing needed medical care, on the now well-known and accepted basis of all insurance, wherein those fortunates who do not require service pay for the service rendered their unfortunate fellows who do require it. I think we can concede that these societies were fairly successful in their purpose, considering the type and character of service expected and rendered. Even so, because of the intervention of very common human characteristics, there were many and varied complaints. In a few years, govern-

ments began to take over these organizations, mainly, we are told, as political expedients. Compulsory sickness insurance for certain classes became rather prevalent.

Proponents of socialized medicine in our own country contend that the system has been a marked success in Europe; many facts and figures have been marshalled in support of the contention. Others have contended that the system has not worked even in Europe, where conditions are more or less favorable, and still other facts and figures are given in proof. Medical and economic literature is replete with articles on the subject. The Bureau of Medical Economics of the American Medical Association has on file, in its office in Chicago, more material on this subject than an individual could read and comprehend in a month of Sundays. Through it all is easily discernible the persistent attempt to socialize the practice of medicine.

Some seven or eight years ago, the now well-known Committee on the Costs of Medical Care was organized for the avowed purpose of studying the conditions pertaining to the practice of medicine in all of its phases, and the proper distribution of the cost of medical care. The American Medical Association joined in this endeavor. Several foundations, welfare organizations and the like, contributed the necessary funds, more than a million dollars. A five-year program was outlined and carried through. The results of the investigations made at the instance of this committee were published in numerous volumes. The final report of the Committee, epitomizing findings, and with recommendations, comprises a fairly large volume. The work of this committee was really monumental, and many of the findings were most valuable, but the recommendations of the majority of the committee were, in the estimation of the House of Delegates of the American Medical Association, strictly socialistic in character and not at all acceptable to the American medical profession.

A minority report, signed by certain physicians on the Committee, approved of the work of the Committee and its recommendations in the main, but objected most strenuously to that portion of the recommendations envisioning a system of socialized practice, recommending instead that any change in the practice of medicine as at the present time set up, be made to accord with certain long-accepted principles, which the plan recommended in the majority report of the Committee was held not to do. In short, the objection was to any system which would modify or abolish the personal relationship between physician and patient. Many other factors were involved, too many to warrant discussion here. Other minority reports were included, one of which was almost pure communism. This large enterprise may, therefore, be said to have been a distinct step towards the socialization of medicine. At the time of the report, it seemed that the step had been taken in vain. The report fell flat.

Then came the New Deal, and with it Federal Emergency Medical Relief. Our Government found itself confronted with the necessity of caring for a hitherto undreamed-of class of indigents, created by the "depression." Constitutionally, neither the Federal nor the State Government could care for the personal needs of our people individually, except in time of war. Conditions equal to those of war were held to obtain at the time, and emergency medical relief became an established fact. The Federal Government published its now well-known "Bulletin No. 7," setting forth the rules and regulations for the distribution of medical relief to this new type of indigents. In this Bulletin, for the first time in history, the personal relationship between physician and patient was emphasized in a law, and the fact was acknowledged that only the medical profession itself could properly evaluate medical service. It was provided that this service should be distributed through the organized medical, dental, and nursing professions. The medical profession of the country, recognizing the existence of an emergency, in a large part agreed to render the service called for at approximately fifty per cent of the usual charges, which has generally been recognized as at, or below, cost. Contracts on this basis, were made with state medical associations, and through them county medical societies. Some of these contracts called for larger and some for smaller fees.

It was recognized at the outset that the service rendered under these contracts was of the sort envisioned by advocates of socialized medicine. It was conceivable that the practice, or some modification thereof, as a perma-

nent thing, might be called for. In many contracts that contingency was cared for at the outset. There has been no act which would definitely commit the profession to socialism. Emergency medical relief has been a success only as we agree that caring for something like ten per cent of the medical practice of this country upon a one-half pay basis is a success. Funds have generally not been available for much more than that. The cost of complete medical service, even on this basis, has promised to be so great that practical politicians would hardly dare to place such a project before the public as a regular institution.

The so-called New Deal has reached the point where social security for the future must be considered. President Roosevelt has appointed a high-powered committee to give the matter consideration and recommend legislation for guarding against the recurrence of depressions. This committee has appointed a committee to deal with the medical phase of the security program, along with employment insurance, old-age insurance, and the like. This committee embraces in its membership some of those who were prominently connected with the Committee on the Costs of Medical Care. Beyond a doubt, the findings of that Committee and its recommendations, will be given serious consideration. Recently a tentative draft of a bill providing for sickness insurance has been semiconfidentially promulgated. It was prepared by an organization which embraces in its official family some of those who have heretofore been concerned with the studies of the Committee on the Costs of Medical Care and other organizations interested in such matters.

Whether this combination, or, if we will, culmination of interest, will result in the socialization of medicine, remains to be seen. Unquestionably an attempt will be made to accomplish just that. It is up to the medical profession itself to decide whether it will accept the new order in contemplation, or whether it will adhere to the present method of practice, with such modifications as may be made as exigency may require, and as can be made without violating the ideals and traditions of the medical profession.

THE ANSWER

And what shall the answer be? I hold the personal view that the medical profession should have its way in this matter; but the medical profession should know thoroughly what it is doing when it makes its decision. It is not only a matter of medical economics; it is also a matter of medical ethics. As is usually the case, however, those interested in changing the order of things are enthusiastic and willing to make sacrifices in the interest of their cause, in both money and time. And as also is usually the case, the defensive is not so militant—and a defensive battle has never yet been won, which I may observe parenthetically.

I have no doubt but that a form of sickness insurance could be instituted in this country which at first would pay the great bulk of doctors better than they are paid at the present time. That is, this can be done if the public is in earnest in its apparent desire to socialize things in general and the medical profession in particular. I am extremely doubtful, however, that any initial advantage attained in this manner would persist. Unquestionably, in a short time the enormous cost of this service, to the individual, the pay-master and the Government, would receive the earnest attention of efficiency experts and governmental economists, to the end that the service thus rendered would become so routine, and so abbreviated, that neither the public nor the medical profession would be satisfied. Eventually our standard of living would be seriously modified by a curtailment of medical service; and in this connection, I am wondering whether it is not, after all, the objective of our economists that our exceptionally high standards of living be reduced more nearly to the level of those of Europe. I should not be particularly adverse to the experiment, except for the fear that, in the course of the time required to determine the feasibility of the scheme, both the medical profession and the lay public would forget what real medical service is like. In this connection, I might observe, and I speak seriously, that there are very few people now living who know what good whiskey is like. Our people have become adjusted to, and satisfied with, the rotten whiskey of prohibition days.

It is my view that there is no real demand for a change in our economic set-up, other than to correct minor discrepancies. I look with suspicion upon the numerous schemes advanced to meet the alleged demands of the

public for a better distribution of the cost of medical service. I have seen no discussion of this subject which would lead me to conclude that the public has not received, individually at least, as great a share of medical service as it has of any other service or commodity. Indeed, I have failed to find any service or any commodity as readily available to Tom, Dick, and Harry, as medical service. Nowhere else is credit so easily secured, and nowhere else is the creditor so tolerant. I call to witness the account books of every general practitioner in this country; and I call to witness the doctors of this country who now are rendering one-hundred per cent service to the indigent for a ten per cent remuneration.

But what are we going to do about it? Let's see. The Committee on the Costs of Medical Care informs us that there were, at the time of its investigation, some one million persons engaged, one way or another, in rendering medical service: nurses, dentists, physicians, and all. The medical dollar appears to have been divided as follows: Physicians in private practice, 29.8 cents; hospitals, 23.4 cents; medicines, 18.2 cents; dentists, 12.2 cents; public health, 3.3 cents; nurses, 5.5 cents; cultists, 3.4 cents; all others, 4.2 cents. The money spent annually for medical service was estimated at $3,656,000,000. Of this amount $125,000,000 was spent for the service of cultists, and $360,000,000 for patent medicines. It is my opinion that if the public will save the money spent in the employment of cultists and quacks, and for patent medicine, the public will not so seriously feel the cost of medical care, and the service rendered the public will be greatly improved.

The cost of this medical service fits into the cost of other service and commodities as follows: Food, $13,060,000,000; rent, $13,060,000,000; savings, $10,000,000,000; clothing, $9,315,000,000; automobiles, $7,882,000,000; household furnishing and supplies, $4,495,000,000; medical care, $3,577,000,000 (amount for medical care spent by industry not included); recreation, $3,420,000,000; education, $3,388,000,000; tobacco, confections, ice cream, and soft drinks, $3,074,000,000; personal adornment $2,698,000,000; fuel, gas, ice, and electricity, $2,573,000,000.

It will be noted that only the items of personal adornment, tobacco, confections, ice creams and soft drinks, and fuel, gas, ice and electricity, are appreciably lower than the cost of medical care, with the cost of recreation and education practically the same. Evidently, the public could easily effect savings enough from comparatively unimportant items to pay for first-class and all important medical service, and on the present basis of charges.

It would be easily possible to enumerate in one, two, three order, savings enough in the field of medical economics to materially lighten the load, as heavy as it is alleged to be. Then, all that would remain to be done would be to provide a system of credit which would, in effect, so spread the cost of medical care that the burden could easily be borne by all except the indigent and the pauper, and these must always be cared for on a basis quite aside and apart from any rules of economics.

There exist today, all over this country, organizations designed to insure credit, not originally in the interest of the debtor, but, rather, the creditor. These organizations are informed as to the habit of debt payment of those who would be credited, and firms participating in the organizations are thus advised before extending credit. Many of these organizations have lately arranged to lend money to people who owe merchants, in order that the merchants may be paid at once for goods purchased, payment by the purchaser to be made to a central agent on the installment basis. For this purpose all debts are consolidated and all payments consolidated. In this manner the organization is in a position to advise the debtor from time to time along sound economic lines. People of restricted income who would spend unwisely, are convinced of their lack of wisdom in this particular. They are taught to purchase the things needed, and to spend money for luxuries only when they can afford to do so.

There are numerous organizations within the medical profession designed more or less along these lines. It would be a comparatively easy matter for the medical profession in any community to arrange a system of payment for medical service which would so divide the cost of the service that it could easily be paid in the course of time. Doctors have always habitually adjusted their charges to the ability of their patients to pay. These medical credit organizations could do the same

thing. Indeed, that is being done here and there over the country at the present time. A medical society establishes a credit organization along the usual lines, affiliates with the merchant's credit association in the study of credit and the collection of money due, but has its own organization for the distribution of medical patronage of people who have no medical credit, among their members who are glad to render this class of service for what they can get out of it. For example, a newcomer in the community applies to the county medical society for medical service, explaining that he has no employment; that he is not able to pay at the present time; and that, when he has employment, his income is so much and his cost of living so much. The medical society arranges with some member on its list, if possible someone chosen by the patient, adjusts the charge for the service and collects the fee in such installments as the patient is able to make and will agree to make.

It is not possible for the government to control the practice of medicine, either as to its scientific or economic aspect. If the medical profession must be governed, it will be far better, from the viewpoint of both the public and the medical profession, that the medical guild be revived. It is my personal view that the State Medical Association of Texas, for instance, could easily be converted into a medical guild; and if there is anything wrong with the practice of medicine in Texas, scientifically or economically, I think I can guarantee that in the course of time the wrong would be righted. I am sure the same observations could be made in the case of each state medical association in the country. Our only concern would be that, in extending legal authority to medical organizations, care be exercised that it be extended to those organizations which represent the whole medical profession and not to special groups therein, no matter how exceptional such groups might be from the standpoint of membership.

My answer to this problem of medical economics is, therefore, that the whole thing should be left to the medical profession as a whole.

WANTED — By Nurse-stenographer, position in physician's office or hospital historian. References. Address Box R. N., Southwestern Medicine.

APPENDICITIS

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A case of appendicitis at one time can give the surgeon a feeling of great satisfaction in diagnosis and in surgical judgment and another case, encountered perhaps only a few hours later, can give a feeling of genuine disappointment and of real distress; especially if avoidable complications have entered the picture to handicap and hamper whatever treatment he may institute.

A medical meeting would hardly be complete without a reconsideration of the question of appendicitis. Few subjects in medicine have more pros and cons regarding certain phases of treatment, and no subject is of more vital importance to the people we serve. Consequently, it is not amiss to spend some time on such a reconsideration.

Vital statistics indicate that approximately 25,000 persons in the United States and Canada die each year from acute appendicitis. This mortality is greater than that for ectopic pregnancy, pyosalpinx, gallstones, pancreatitis and splenic and thyroid disease combined, so McDonald of Duluth tells us. The mortality rate, according to the figures of the last three decades, seems to be on the increase rather than on the wane. What are the causes, for there must be more than one, and what can be done about them?

In a recent conversation Dr. Walter Judd, who spent seven years in China as a medical missionary, stated that during that time he never saw a case of appendicitis among the Chinese, but that when these people migrated to this country, they became susceptible to the condition. Roy D. McClure, quoting McCarrison of the British Army in India, stated that the latter in fifteen years of service in a certain area of the Himalaya Mountains not only never saw, but never heard of, a case of appendicitis; also, that Dr. Paul Harrison, a missionary in Arabia, had seen but one case of appendicitis in twenty years' service in that country.

This naturally brings up the question whether appendicitis, in part at least, is not etiologically related to diet, and whether the increase in incidence in this country is not a penalty we pay for so-called "more civilized" foods. Not to be covered by this theory, of course, are cases in which various foreign bodies, such as worms, hairs, and nails, have been found in the appendix. The first modern operation for abscess of the appendix was performed by a French surgeon, Mestivier, in 1759. Subsequently, at necropsy, it was found that a pin had perforated the wall of the appendix and had caused the abscess.

Whatever the underlying cause of appendicitis may be, there seemingly is little that the medical profession in this country can do about it other than, in a more unified effort to lower mortality, to realize its frequent occurrence and to study the individual case and groups of cases to determine how to lessen the severity of attacks and how best to deal with the individual patient as he presents himself.

One who peruses the literature on appendicitis, and there is indeed a mass of it, cannot but be impressed by the agreement concerning treatment of the earlier phases of the disease and by the marked disagreement concerning treatment of later phases, when complications secondary to the condition have entered the picture. Naturally, but tragically, the greatest variation in methods of treatment lies in that group of cases in which the death rate is highest. One becomes mystified that such great names in the profession can be connected with both sides of any medical or surgical controversy; such a state of affairs, however, would indicate that there apparently are sound arguments for both sides. On the other hand it is logical to assume that each method, either that of operating on all patients with ruptured appendices immediately when they present themselves or that of applying the Ochsner expectant treatment in such cases, cannot be equally effective as an unalterable routine. The fewer the cases of this nature a surgeon has, the greater his doubt as to which method is the safer and which carries the lower mortality rate.

The best method of determining the answer is, as Al Smith would say, "to turn to the records," weigh the findings, and decide for yourself what will be your method of procedure when faced with the problem of treating a localized or general peritonitis, the result of a ruptured appendix. I say "usual method" because I realize that even the most rabid adherents of either method have certain individual cases in which they adopt, temporarily, the opposite although scoffed-at procedure. It is to be remembered, too, that should death occur when they depart from their routine, they go back to their favored form, more convinced than ever that the proponents of the other method are wrong.

For the sake of ease and clarity in handling the subject matter, I would divide cases of appendicitis into two main groups: the first including cases of chronic, subacute, and acute appendicitis without rupture and the second, cases of appendicitis with rupture and peritonitis. I have grouped them thus because we are principally interested in morbidity and mortality and, consequently, I shall spend little time in dealing with the first division, realizing that the principles of treatment are well understood by all and that the mortality from surgical removal, despite often atrocious technic, is relatively low.

Let us not be concerned here with the incision. Suffice it to say that in some cases operation is easy, regardless of the incision, and in some difficult, making the surgeon who has used a McBurney incision wish he had used a right rectus incision and the one who has used a right rectus incision wish he had used a McBurney. It is well to remember, too, that many sins of incision have been committed in the name of McBurney. I usually use a right rectus incision, except in those cases in which I expect to drain, when a McBurney incision usually is preferable.

To invert or not to invert, that is the question. Most surgeons who invert do so that they may sleep more soundly, feeling that the danger of blowing out the stump has been obviated. There are four reasons why I do not invert the carbolized stump of the appendix: (1) Dr. Robertson of the Section on Pathologic Anatomy at the Clinic has found that invariably, in cases in which appendectomy with inversion of the stump has been done in combination with some other surgical procedure and death has resulted, there is a pus pocket in the inverted stump up to twenty-

one days postoperatively; (2) the cultured suture material used to invert the stump, once having run through the intestinal wall, invariably is infected with pathogenic bacteria; (3) noninversion shortens the surgical procedure, and (4) I have not had occasion to regret not having inverted the stump.

The conflict concerning chronic appendicitis, and its existence or nonexistence as an entity, has been waged for the last twenty-five years. Bettman, in 1928, compiled figures from thirty-five of the leading hospitals of the central portion of the United States; these indicate that appendectomy was done in 5,664 cases for chronic appendicitis in 1927. Symptoms among 40 per cent of patients were unrelieved, and among 11.6 per cent were worse following operation. The immediate mortality rate was 1.7 per cent.

The period in which appendicitis was classified by a medical wit into two groups, the acute and the remunerative, is past. No longer is the diagnosis of chronic appendicitis indiscriminately made without first ruling out by carefully taken history and laboratory examination other possible causes of symptoms. I am convinced that there does exist a variable syndrome which is caused by chronic appendicitis. The difficulty is in the correct recognition of it preoperatively. The correctness of the diagnosis in most instances cannot be confirmed until a sufficient period of time has elapsed postoperatively to warrant such confirmation.

Apropos of this, in 1933 Barber and I reviewed 100 consecutive cases in which exploration and appendectomy had been done. In these cases, operation had seemed advisable, for unexplained symptoms, following the careful taking of a history, even though laboratory and roentgenologic findings were negative. There had been an interval of five years since operation in this group of cases, sufficient time to be sure of results. Sixty-nine per cent of the patients in this group said themselves that they were cured, 21 per cent were materially benefited, 9 per cent were not helped; although two of the last nine were well at the time they answered the questionnaires, they attributed their state of health at that time to subsequent removal of infected teeth and tonsils. The appendices in this series were reported to be chronically diseased.

Relative to intermittently active appendicitis, subacute appendix, and acute appendicitis without rupture, there usually is little doubt as to diagnosis, and certainly there is no doubt as to the necessity for operation. In particular, the patient with an acute condition is to be operated on without delay; on this point all authorities agree. The mortality rate can be kept low and the complications minimized only by such measures. Bastianelli wrote, "When physicians are discussing whether a case is appendicitis or not, it is; when they are inclined to admit the possibility of appendicitis without being sure of it, it not only is, but is about to perforate; when the diagnosis is sure, there is already perforation, with more or less circumscribed peritonitis." It is not regrettable for a surgeon to remove a normal appendix in the presence of symptoms suggestive of acute appendicitis, so long as the diagnosis, although wrong, has been made within the time limit of safety. Particularly should the time limit be short if there is a history of cathartics or of laxatives having been given or taken.

The mortality rate is low in this type of appendicitis without rupture of the appendix. When death does occur, it usually is from accident or from embolus—embolus, that fatal spectre which always hovers near the convalescent patient. Little is known of the etiology or of the prevention of embolus other than that its toll is approximately 10 per cent of all surgical deaths, that it occurs most frequently between the eighth and twelfth postoperative days, that in about 85 per cent of cases the primary source of the embolus is in the left iliac vein, and that it is most likely to occur among patients with a local or general tendency toward venous stasis. So far, therapeutic efforts to combat it for the most part have been directed toward keeping up the blood flow to as high a degree of efficiency as possible, by the position in bed (a modified Trendelenburg position for twenty-four to forty-eight hours, as has been advocated by Gray), by exercise and early massage of the legs, and by the routine of giving thyroid extract in doses of 2 grains (0.12 gm.) three times a day as soon as the patient can take it, as advocated some years ago by Walters. Strangely enough, cases of embolism which I have encountered have occurred among the

small group of patients to whom I failed to give thyroid extract.

Having satisfied ourselves that early observation, early diagnosis, and early operation are the important factors concerned with the proper treatment of the disease while it is still confined to the appendix, let us come now to a consideration of the ruptured appendix with local abscess, or with general or spreading peritonitis, realizing, of course, that these cases never should have reached this stage had diagnosis been properly made and operative treatment promptly given. In all fairness to physicians, they are not usually to blame, although this could not have been said some years ago.

Earlier in this paper I suggested going over the literature on the subject, evaluating it, and then deciding which was the best general method of handling the complicated case of appendicitis. That is easy to say but difficult to do. The individual classifications are too diverse, and the surgeon finds himself reviewing his cases in his own mind and saying to himself, "Now just exactly what case does he mean here?" In the end, he becomes quite confused and still wonders whether, after all, changing to another method will be a liability or an asset to his surgical practice.

I shall refer here to two recent papers which support the policy of immediate operation, both of which are excellent. Keyes reported the results of such a planned policy at Barnes Hospital and at the St. Louis Children's Hospital; among a total of 315 cases in which abscesses were drained, the mortality rate was 7.3 per cent, and among a total of ninety-eight cases in which appendectomy was performed in the presence of spreading peritonitis the mortality rate was 28 per cent. Gile and Bowler, in a controlled series at Hanover, N. H., brought out clearly the importance of early diagnosis and of operation for appendicitis, but in the cases of spreading peritonitis the mortality rate was 36.3 per cent, whereas for drainage of localized abscess, it is 3.3 per cent.

In support of those who favor the deferred, or Ochsner, treatment in cases of general peritonitis resulting from appendicitis with rupture, the paper by Coller and Potter, of Ann Arbor, gives assurance. The mortality rate in their group of cases of localized and drained abscess was 5.7 per cent, and the mortality rate in cases in which the deferred, or Ochsner, treatment of spreading peritonitis was used was 9.3 per cent in a series of eighty-five cases.

The chief bone of contention between the two schools seems to be whether with a ruptured appendix the natural bodily resistant forces are better able to cope with the infection and localize it with an unopened peritoneum or when the peritoneum is opened and drained after removing the appendix, if it is reasonably possible to do so.

At The Mayo Clinic, the deferred, or Ochsner, treatment is favored in most cases of diffuse or spreading peritonitis. I say "most cases" because, among children, this policy is departed from in many instances. Children, and this is borne out by all figures on the question, carry a higher mortality rate than other groups with this disease, and they particularly do not seem to tolerate deferred operation, perhaps mostly through inability to cooperate in the rigid details connected with properly administered Ochsner treatment.

"Properly administered Ochsner treatment," —that, I believe, is the crux of the situation, and I feel that failure to get convincing results perhaps is the result of laxity or of an improper understanding of its application. It is the close following of details connected with this treatment, when the doctor is not in the room, that often makes the difference between success and failure, and failure to observe this rule has allowed the method to be damned with faint praise and to lose caste with many individuals.

The essentials of treatment are as follows: A private, quiet room, a good nurse, a fairly high Fowler's position in bed, judging by the position of the patient in relation to the floor rather than to the bed itself, constant application of heat or of ice bags to the abdomen, morphine sulphate, dosage "enough," every four hours, to comfort the patient mentally and physically, and a small, indwelling duodenal catheter introduced through the nose for constant suction. The method advocated by Wangensteen for intestinal decompression in obstruction has been found at the clinic to be very satisfactory. Nothing is given by mouth; fluids are supplied as individually indicated, either by the subcutaneous or intravenous route, and are given constantly

and in as large quantities as is compatible with the case. No fluids are given by rectum. The chemical composition of blood and urine is checked frequently to keep a proper balance. In other words, everything is done to induce physiologic rest of all parts.

Coller and Potter stated that it was not necessary to perform enterostomy in any of the cases in their series. Enterostomy has not been done at the Clinic for such a case in years.

It is not possible, of course, to save all patients with any method. When the progress of the individual patient concerned is satisfactory, the temperature and pulse drop and, in a variable period of time, usually within a few days, the abscess is localized and drainage can be carried out in those cases. If the appendix is easily reached, without disturbing the wall of the abscess, it can be removed at the same time; if it is not, and the abscess is drained or, as occasionally happens, the abscess ruptures back into the bowel and no drainage is indicated, the patient should be instructed to be careful, to avoid laxatives, and to return for appendectomy between eight and twelve weeks later. Before this time evidences of the peritoneal condition might interfere with a clean operation, and operation is best deferred unless an intercurrent attack intervenes.

The patient who comes to the doctor with an indefinite mass in the right lower abdominal quadrant, a three or four-day history, who has had a ride over a rough road to the hospital, and who has a temperature of 102°F. or so, a high pulse rate, and a high leukocyte count, might also be advisedly placed on expectant treatment with such variations as are indicated.

When the time for drainage is ripe, the surgical procedure should be carried out quickly, and with as little manipulation as possible so as not to disturb the efforts of the body toward localization. It is the custom at the Clinic to use three drains, usually of rubber tissue, one toward the pelvis, one toward the appendix, and one upward along the outer side of the ascending colon. It has been noticed that when the pus is thick and creamy, convalescence is more uneventful than when it is of the thin, milky-whey type. Suffice it to say, relative to drainage, that it should be sufficient and efficient.

In an extensive study pioneered by Weinberg of France, it was found that the predominating organisms of acute appendicitis were of two types: aerobic and anaerobic. Of the aerobic organisms, colon bacilli, streptococci and staphylococci were the important ones; of the anaerobic, he found that 30 per cent of the acute appendices contained the Welch bacillus and that these organisms were present in much greater numbers in gangrenous appendices. It was his conclusion that anaerobic organisms markedly aggravated the general course of the disease and affected the prognosis, a point that has been confirmed in his own country, Germany, Japan and in this country. On the basis of these bacteriologic studies, Weinberg prepared first a serum against anaerobic organisms and then a colon bacillus serum, to be used in combating these organisms.

Henschen, in Switzerland, following the use of this serum in a series of ninety cases, reduced his mortality rate in cases of appendicitis with rupture from 13.5 per cent to 7.2 per cent; Kunz reduced his from 18.5 per cent to 13 per cent. In other words, reports are sufficiently encouraging to warrant serious consideration of its use. As yet, our experience with it has been limited but encouraging. At the Clinic, when indicated, the serum is given intravenously in saline solution. Priestley, in preliminary report, stated that the polyvalent serum against anaerobic organisms had been given in nine cases, with one death, and that the polyvalent serum against anaerobic organisms had been given in combination with colon bacillus serum in three additional cases, with no deaths. The series, of course, is too small to allow any conclusions to be drawn, but it is interesting to see that there is still progressive work being carried on in an effort to combat peritonitis.

Treatment of disease is important; if there is anything that is more important, it is prevention. Prevention, and its relation to appendicitis, is concerned not with the disease itself but with its complications. It is well known that the complications are caused by delay in diagnosis, delay in operation, and the interim administration of "home remedies" or of cathartics. The answer to the method of prevention is obvious—practical instruction of the public.

I would question whether the program of

attack has been carried out vigorously enough; at least, the results do not demonstrate this to be true. We must remember that there are two methods of attack, direct and indirect.

The indirect attack should be carried out on cathartics; indirect because we, as a profession, in our talks before the public, have not learned that it is a psychologic error to tell the people to "call your doctor;" we should let somebody else do that. Let the attack be on cathartics because practically every paper which has been written on appendicitis has stressed the danger of catharsis. Bower's figures, in Philadelphia, showed that of 6,237 patients who were admitted to hospitals in 1930 and 1931, 2,758 gave a definite history regarding laxatives; 1,973 received laxatives and 146 died or one in fourteen. Of 785 patients who did not receive laxatives, seven, or one in 112, died. Keyes, in a series, found that of 193 patients who took laxatives, thirty-four died. Of forty-two who took no laxatives, only one died. The mortality rate among those taking laxatives was about eight times as great as among those not taking laxatives. At The Mayo Clinic, about 95 per cent of the deaths from appendicitis occurred in the group of patients who had taken laxatives.

A plan to control cathartics and laxatives, to be successful in its operation, should be suggested and sponsored by the medical societies but should be carried into operation by the druggists' and pharmacists' associations. The greatest control can be exercised at dispensing points by means of a verbal warning and advice to call a doctor if a cathartic is bought to relieve abdominal distress, and also by a labeled warning to be pasted on the container.

Some such plan has been tried and operated successfully in Philadelphia; it was sponsored by the Philadelphia Medical Society and endorsed by the Department of Public Health. That such a scheme should produce gratifying results is logical. If put into practice in local communities and found to be sufficiently beneficial in lowering the mortality rate from appendicitis, it would be bound to spread and, as laws were made to protect the people, perhaps, as Dr. Heald has suggested, legislation might be enacted to give still greater control over the problem of the acute appendix and cathartics.

This discussion of the question of appendicitis has been longer than I intended. That I may be more clearly understood, I shall conclude by stating that the evidence, as I interpret it, would indicate that: 1. Appendicitis, early observed, early diagnosed, and early operated for, is not dangerous. 2. Delay and cathartics are the greatest sources of danger in appendicitis. 3. The complications resulting from mistreatment are all dangerous, regardless of the type of treatment employed. 4. Localized abscess of the appendix, with rupture, is a surgical condition requiring drainage and, if possible and within reason, the appendix is best removed. 5. Spreading peritonitis in such cases is treated most safely by a rigid Ochsner regimen, except among children and in certain other cases in which the appendix has been ruptured within the hour. 6. Diffuse peritonitis should always be treated by a rigid Ochsner regimen. 7. A cooperative program, sponsored by medical societies and carried out by druggists' and pharmacists' associations, might well be considered as an efficient plan to control the misuse of cathartics.

DISCUSSION

DR. GEORGE T. COLVARD, (Deming, N. M.): I listened to Dr. Mayo's paper with a great deal of interest and was greatly surprised at the high mortality rate in the United States and Canada. It seems to me that the reason for this high mortality rate is due to the fact that the diagnosis is not made early enough. A great many men doing general practice, in cases where there is no increase in leukocytes, no rigidity of the right rectus, no particular tenderness on pressure over that region, will make a diagnosis other than appendicitis. In cases of that type I think it is very necessary to make a rectal examination.

I should like to ask Dr. Mayo what, if any, adhesions he gets in those cases where he removes appendix without inverting the stump? Where the cecum is involved it is almost impossible to put a purse-string suture. I am wondering if he would not get more adhesions by sewing the peritoneum?

DR. F. D. VICKERS, (Deming, N. M.): It seems to me that if we waited in these cases of acute appendicitis, we would not know when to start to operate. If we have peritonitis from other causes we do not wait. Why wait for peritonitis from appendicitis? And if the case is seen late, you may not be sure of the cause.

DR. R. L. BRADLEY, (Roswell, N. M.): In the first ten years of my practice before we operated on the appendix, we would have torpid bladders. I have only been able to recall two deaths that I am sure were due to appendicitis, though nature came to my rescue in several of my cases. We had one case that ruptured into the bladder and drained through the bladder very extensively for about ten or fifteen days, but the patient

came through all right. Last year that woman visited me while on the way to the Carlsbad Caverns and she made a fine recovery and had been well ever since. I have made it a rule to operate on a case as soon as I made a diagnosis and if I get in there and cannot find the appendix, I drain it, get out and do a subsequent operation instead of hunting around for the appendix and getting pus all over. I used to ligate the stump and never had any bad results from that, using catgut for the purpose, but when everybody else got to pus draining and inverting the stump, I followed also. I believe, however, that I got just as good results when I ligated, and dropped it back, as I do now.

DR. MAYO (closing): I am not here to tell anyone how to care for ruptured appendix. The only thing I attempted to do was to present the findings as I saw them and as we have found them at the Clinic. I do not believe that anyone on looking over the literature, can help but be impressed by the agreement concerning treatment of the earlier phases of the disease, and the marked disagreement concerning later treatment when complications enter, and also be impressed with the difference in mortality. There may be some difference in the virulence of the infection in the various communities, and there may be some excuse on that basis.

As to having the patient come back for appendectomy after the abscess has been drained or has ruptured back into the intestine: I personally have seen an appendix ruptured three times. Consequently, we advise the patient to return for appendectomy eight weeks after the ruptured appendix has been treated. We never have lost a patient treated secondarily in this manner.

Concerning the question of inversion or non-inversion: we have a number of surgeons at the Clinic, half of whom invert and half of whom do not. I do not invert because of the experience of Dr. Robertson at the Clinic, who has found that in cases in which appendectomy with inversion of the stump has been performed in combination with other surgical measures, and death has resulted, there is a pus pocket in the inverted stump up to twenty-one days postoperatively. He also has found that the suture used to invert the stump, havng run through the intestinal wall, becomes infected with pathogenic bacteria. I do not think it makes any difference in the mortality or perhaps in the development of adhesions. We have not had any difficulty in the cases in which we have not inverted the stump. These are the reasons I do not invert the stump.

I want to express my appreciation for the honor of being allowed to be here with you and to present a paper.

INDUSTRIAL ACCIDENT NEUROSES: SUGGESTIONS FOR APPRAISAL AND TREATMENT.

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(Read before the Maricopa County Medical Society, at Phoenix, Arizona).

There is an increasing interest on the part of physicians caring for accident cases, in the psychiatric phases of industrial injury. However, there is still a careless use of the word "neurotic" which in psychiatry is tantamount to the use of the expression "heart trouble" in general medicine. It is suggested, first, therefore, that physcians use the nomenclature compiled by the National Conference on Nomenclature of Disease.

There are but three well-defined psychoses due to trauma; traumatic delirium, post-traumatic constitution, and post-traumatic mental enfeeblement. The physician is but rarely concerned with these, as the admission of patients suffering from traumatic psychoses is not more than .3 per cent, according to May.

We are concerned here with the traumatic neuroses, and it is urged that we drop the nebulous expression "compensation neurosis" and be more specific, using also the classification adopted by the National Conference on Nomenclature of Diseases, for after all, the traumatic neuroses are not essentially different from any others.

Hysteria:
- Anxiety hysteria,
- Conversion hysteria,
- Dissociation states,
  - (fugues, amnesia somnambulism, catalepsy, trance, dual personality, etc.)
- Tics,
- Simple depression,
- Anxiety state,
- Neurasthenia,
- Hypochondriasis,
- Compulsive states:
  - Obsession,
  - Mania, e.g., kleptomania,
  - Phobias, e.g., agarophobia,
  - Tics,
  - Spasms.
- Mixed forms,
- Neuropathic personality:
  - Schizoid personality,
  - Syntonic personality.
- Maladjustment,
- Psychopathic personality,
- Constitutional inferiority.

It is quite possible that later we shall adopt a special classification for the traumatic neuroses, for these have certain things in common, especially the element of compensation. On the other hand, in many accident situations, such as those observed when the civil population is affected by the horrors of war, private duelling, personal injuries due to so-called acts of God—for example, earthquakes, storms, volcanic eruptions,—in injury due to athletic contests, in injuries in the home, and in injuries

suffered in many other forms of employment not covered by accident insurance, for example farm work, we rarely see what we have understood as traumatic or compensation neuroses.

When there is no possibility of compensation, a neurosis does not ordinarily develop, even in the most neurotic types, as the psychiatric and mental hygiene situation is met promptly and spontaneously at the date of injury.

Archambault, in his lectures to medical students at Albany Medical College, frequently remarked, "If I can get an industrial accident case while he is still a medical virgin and has not been contaminated either by legal counsel, a grasping relative, or great delay, I can return him to his job with a sound mind within a reasonable time, provided, of course, the surgeon succeeds with his task."

One thing brought out in this statement, to which attention has been called by others, is the "period of meditation." In other words, it takes time incident to delay, tardy settlement, uncertainty of outcome, and many other factors, for a patient to develop what we have vulgarly called a "compensation neurosis."

The writer believes that it is important, if the medical profession is to handle the neurotic factor with the same precision and effectiveness as are displayed in the surgical and medical procedures, to use a special type of anamnesis. This is necessary because traumatic neuroses represent a flight from reality, and, as such, they are purposeful, although the purpose may be conscious or unconscious. To make an appraisal then of a suspected neurotic factor in an industrial-accident case, it is necessary to have a great deal of special information.

I. Physical.

1. If the patient complains of pain, does a powerful analgesic relieve the pain? Conscious malingerers, as well as unconscious, will frequently complain that the pain persists, although they have received massive doses of anodyne.

2. What contribution does pre-existent pathology make toward the patient's complaints? A neurotic patient is very apt to show a cumulative state composed of aches and pains, signs and symptoms of previous ailments, of which he was aware or unaware, and combined with the signs and symptoms incident to the present injury.

3. How logically are the signs elicited in the physical examination connected with the present injury?

II. Psychiatric Analysis.

1. As a result of the usual and standard examination of the patient, what personality impression does he give, i. e., is he the sort of person who would be likely to develop a traumatic neurosis? Is he shut-in, unstable, rigid, schizoid, inferior, psychopathic?

2. Have there been any other physicians on the case? What have they done and said to the patient? And how much time has elapsed since the injury?

3. What is his general behavior during the examination, to active and passive movement, to pain? Is he irritated by the procedure? What comments does he make concerning the examination and the accident?

4. Has he engaged counsel?

5. Are his symptoms logically connected with his injury and are they exaggerated?

6. What is his attitude toward returning to work?

7. If he limps or shows any other mechanical token of injury, does he do it well or too well?

8. What inconsistencies, if any, do you notice in the patient's behavior or comments?

9. Is the employer or the insurance carrier showing any delay or other attitude which might precipitate a neurosis during the meditative period?

10. If you believe the patient is malingering, is this a conscious or an unconscious process?

11. Ascertain from the patient if he has been satisfied with his job, compensation, associates, superior officer, and working conditions. Replies in the negative might indicate a very appropriate foundation upon which a traumatic neurosis could be erected, and suggest prompt prophylactic mental hygiene.

12. Patient should be asked guardedly about his home conditions and personal happiness. If his home conditions are unhappy or if he expresses marked dissatisfaction about his personal life, another foundation is suggested upon which a neurosis might be developed.

III. Outside Information. No psychiatric anamnesis would be complete without information from persons other than the patient, whether they are neutral or biased. Informa-

tion should be obtained from the patient's superior, from some member of the family and from some associate whose friendship is not unduly burdened with bias. Among other things, the following questions should be asked:

1. What has been the patient's job history in general? Has he been successful, well-thought-of by associates and employers, able to follow directions, punctual, skilled, industrious, trustworthy? Is he noted for cheerfulness, common sense, and good judgment, or has he been moody and inclined to show poor judgment? Is he inclined to shirk? What is his behavior when he gets hurt? How much time does he lose over minor injuries and illnesses?

2. The same information should be obtained about the present job with a special care. In addition, it should be asked if he was satisfied with his work and pay, and if he had any special grievances from which a neurosis might provide an escape.

3. How does the patient behave outside of the doctor's office? Does he show the same limp or other mechanical token of injury? Does he go on with his pleasure life or avoid it? How much does he make his family aware that he is suffering? In general, what is his behavior off guard?

4. What is his energy quotient outside of the doctor's office? Most patients suspected by their physician of malingering or of neurosis, show a very much depleted energy quotient in the presence of the physician and a markedly augmented energy quotient when safely away from the doctor's office. This may be conscious or unconscious behavior.

5. In the case of a patient exhibiting facial expressions of pain while in the doctor's office, does he show this on the outside and how much?

6. What are the patient's home conditions and home influences? Is his wife or any other member of the family urging him, directly or indirectly, to exaggerate or feign symptoms in order to obtain increased or continued compensation? Is there anything in the patient's home life which might cause him to seek a means of escape by developing a neurosis as a result of injury?

IV. What objects could the patient gain by means of a traumatic neurosis? Only insofar as we can gauge this accurately can we be of any real psychiatric assistance in helping the patient to recover from the neurotic element, since all neuroses are purposeful, whether conscious or unconscious. Because the neurosis represents, as it always does, bad judgment in the underlying purpose, it is futile to argue with the patient. He must be shown by a flank attack a more constructive means of escape and one which satisfies the criteria of good judgment. Therefore, is the neurosis as an escape mechanism helping the patient to escape an unpleasant job, a disagreeable associate, an intolerable boss, an offensive home personality, or any other inferiority situation?

RECOMMENDATIONS FOR PROPHYLAXIS AND TREATMENT.

I. Industrial.

1. Industry should pay more attention to the personality type of employees and keep away from danger those who show a tendency to get hurt, or because of their neurotic makeup, are inclined to take flight in neuroses.

2. Where employers have their own physicians with offices within the working establishment, care should be exercised when treating injured workers, to anticipate the possible development of neuroses, especially in personalities who would naturally lean to such an escape.

The writer recalls a fine-looking boy of twenty-two, treated in a factory accident room for the loss of the distal phalanx of his index finger. He joked about the whole business and left laughing, only to attempt suicide within the next hour. He was a musician and was working in the factory to earn money for his continued education. Thus "laughing a thing off" is a risk type of mental hygiene and should not be used unless the doctor knows his man.

3. It is suggested that employers keep not only the standard job record on each employee but notes under the following headings:

(1) Ability to get along with people.
(2) Ability to follow directions.
(3) Ability to lead others.
(4) Type of moods shown while at work.
(5) Estimate of common sense and good judgment.
(6) Ideals of courtesy, honesty and service.
(7) Initiative and resourcefulness

(8) Mechanical skill.
(9) Orderliness, system, and neatness.
(10) Perseverance and industry.
(11) Physical strength and general health.
(12) Promptness and punctuality.
(13) Responsibility and trustworthiness.
(14) Time lost and for what causes.
(15) Behavior when sick or injured.
(16) As many traumatic neuroses are based upon deep feelings of resentment because the employee feels he has not been justly treated and that his talents have not been adequatelty marketed, it is suggested that where possible the worker's record card show the following facts and that such facts be recognized in practical ways: national origin, languages spoken, education, special training, usual occupational classification, hobbies, pastimes, special abilities, tastes and talents, clubs and organizations, occupational interests and ambitions, religion, intelligence rating based principally upon industrial performance.

(17) All employes in industry, especially where the employer is liable in case of accident, should be required to submit to a physical examination and the results should be placed with the employee's record. Then in case of accident, physicians may more promptly and accurately estimate the bearing of the employee's previous condition upon the present accident situation.

4. It would be to the advantage of physician, employer, and insurance carrier, if more complete records were kept on employees, not only as to their job behavior, aptitudes, and progress, but as to their personality makeups and the type of personality displayed in the job situation. Such information would be a valuable guide in the handling of those accident cases which are thought to have either a frank malingering factor or an unconscious neurotic element.

5. The employer should also exert himself promptly to assure the injured employee that he will be adequately cared for, and thus he need not engage counsel, but, on the contrary, avoid getting into the hands of unscrupulous attorneys. It would be well in the same connection to assure him that upon recovery he can return to work and if his accident has maimed him so that he cannot do precisely the same thing, that nevertheless another type of employment will be found for him.

6. Where industrial hazards are marked, there may be some value in the suggestion of offering bonuses to employees who have a low injury record.

II. The Insurance Carrier.

It is urged upon insurance carriers that they modify their attitude in regard to the one injured and invalided by an industrial accident, in which they disapprove of his engaging in any gainful occupation while receiving compensation. It is the opinion of many of us in the field of psychiatry that this attitude is expensive to the insurance carriers and therefore tends indirectly to make the cost of industrial insurance higher than it might be. It is during these long periods of inactivity that so many patients develop neurotic symptoms which, in turn, prolong considerably the period of invalidism and, therefore, of compensation, which comes from the carrier's purse. In this connection, the writer offers two suggestions: one, that where possible the present employer give the patient an easier job approved by the physician. This keeps the patient under the emotional stimulation of his customary job habitat, and, quite humanly, he is made anxious to gain favor and approbation among his fellows by getting back to his original and better position. The other suggestion is that, where the above is not possible, the patient be allowed to take any gainful occupation he may obtain by his own efforts or those of others. While this is not as valuable from a mental hygiene standpoint as the other suggestion, it is still valuable, and the patient ordinarily is too much entertained by occupation and the fact of even a small remuneration, to develop a neurotic condition.

It is suggested that the insurance carrier employ psychiatric social workers to obtain information and observations regarding the patient's home life and outside activities, where the physician believes such data will assist him in appraising a suspected neurotic factor or malingering. Too often investigators have not had appropriate technical training and experience for this delicate task. While the adoption of this suggestion entails added expense, the representative of one carrier told the writer it was his firm's belief that thirty to fifty per cent of compensation paid was chargeable to the neurotic factor, and that at least half of the money paid to satisfy judg-

ments in lawsuits was due to the neurotic element also.

It is highly important that the insurance carrier not only reduce red tape and make as prompt an adjudication and settlement as modern efficiency can command, but, what is still more important, that the carrier take pains to inform the injured at the outset that such will be the case. Often the protracted periods of waiting and doubt are malignant factors in precipitating in the patient's personality a neurosis which, in the long run, is very costly to the carrier.

In certain cases the insurance carrier would find it to its advantage to allow the attending physician to treat coexistent maladies.

Where it is believed that the patient is in danger of, or has already developed, a neurosis which threatens to make the case unduly costly, the carrier would do well to have the attending physician refer the case to a psychiatrist.

III. Medical.

1. A physician should never openly and directly charge a patient with malingering or with being neurotic. This is a situation which should never be met directly, but with the cleverest indirection. Above all things, the patient's "face must be saved," whether the physician believes the patient is malingering or not.

2. It is most important that the patient's confidence be won and even unreasonable symptoms be listened to patiently and respectfully.

3. The patient should be assured of the best possible prognosis.

4. The physician should promptly offer to give what aid he can in obtaining a prompt settlement.

5. It is highly desirable that the physician, if possible, give within reason, treatments which the patient desires. This may seem unreasonable to many men and highly unscientific. However, it has great practical psychological value in dealing with the neurotic individual, especially if the intelligence quotient is low.

6. It is desirable, although insurance companies may not allow it, that patient be treated for coexistent maladies. Such maladies, because of discomfort, pain, or inconvenience, may be largely responsible for the creation of the neurosis.

7. Even at the very first consultation between patient and physician, the latter should prescribe and insist upon some form of occupational therapy. The enforced idleness incident even to temporary deprivation of occupation is a very fruitful soil for the development of a neurosis. We can prescribe occupational therapy of many sorts, even though they are not gainful. It is desirable in this connection that someone report on the patient's job behavior in connection with the occupational therapy. Thus the physician may obtain knowledge which may enable him to forestall the development of a traumatic neurosis, either by a change of the occupational therapy or by appropriate psychotherapy.

8. It is highly important that the physician at the very outset begin some sort of psychotherapy, or mental hygiene program, to run concomitantly with the medical and surgical procedures. Among other things, it is important to keep alive or to cultivate what the writer calls "energy-releasing ideas," e. g., ideas relating to ambition, promotion, success, the culture of courage, the satisfaction of having been courageous in the present instance, building plans for future economic success, and so forth. In this connection, the physician should be conscientious in praising the patient for even the most trivial gains or tokens of cooperation and progress. The physician should go out of his way to conspire with the patient to find some sort of happiness during the period of invalidism.

9. A very practical and helpful procedure is for the physician or employer to arrange, when the patient may do so, excursions to his job location. This gives him encouragement and keeps up an interest for recovery and the return to his job.

10. The physician having learned of other objects which the patient may entertain, consciously or unconsciously, in developing a neurosis, might give adroit suggestions as to how the patient may obtain these same objects in a more constructive and therefore a more satisfying fashion.

11. If it is believed that some "key relative" or other person is urging the patient to prolong invalidism by means of neurotic symptoms, it would be well that this indi-

vidual be contacted and his cooperation secured toward a more constructive use of his influence.

12. It is highly important that patients be given adequate anodynes for pain, and hypnotic drugs, if necessary, so that they may have the benefit of comfort and adequate sleep. It is the writer's experience that there is still an aversion on the part of industrial surgeons, as well as practitioners who occasionally see industrial cases, to the giving of anodynes and hynotics because of an unduly emphasized fear of habit formation.

TUBERCULOSIS AS SEEN IN THE POSTMORTEM EXAMINATIONS OF CHILDREN

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(Read before the New Mexico Medical Society at its Fifty-second Annual Meeting, at Las Vegas, N. M., July 19-21, 1934.

I appreciate the honor of being invited to take part in this meeting. When I look over the program and notice the number of distinguished guests present, it makes me feel very humble and I appreciate all the more the opportunity of appearing before you.

As pathologist and roentgenologist of the El Paso City-County Hospital, it falls to my lot to get the laboratory part of the material ready for the monthly staff meetings. In the past this consisted of reading the postmortem reports and showing any x-ray films that might be available, as well as showing the specimens saved from the case. The results obtained from showing a large number of specimens (except when they are most unusual) do not always seem satisfactory. In other words, not much interest is manifested in specimens and films. Now, this may not be the fault of any one. When specimens are removed from the body and taken to the laboratory half of the interest is already lost, because seeing specimens in relation to one another and to the body makes them much more instructive and interesting. It often takes the pathologist some time to study out lesions and get their proper interpretation. After a specimen has been hardened it loses more of its interest, so it can hardly be expected of a man who has never seen it fresh to immediately grasp all that it has to show; and in a meeting where thirty or forty are present if a specimen were to be carefully studied by everyone it would take a couple of hours to get around with one specimen. It stands to reason that those who are not looking at the specimen and are just waiting are going to get disinterested and uneasy, and also much time will be lost.

For several years a small group of us have met together and studied postmortem material to good advantage, but in the larger groups different methods have to be used in presenting the material in order to hold interest. At our last two staff meetings lantern-slide photographs of specimens and of x-ray films were used. Several of the photographs were made at the postmortem table. The results seemed to make it well worth while. Of course, not all material coming before a staff meeting lends itself to such treatment, some material being much better than others. Interesting cases also often fall into groups, so that it is possible to present several cases at one meeting covering several phases of a subject.

At the last staff meeting there was an unusual group of cases of children dying of tuberculosis, and the lantern-slide demonstration of this material made such a hit that it seemed worth continuing. Since that meeting we have had several more cases and we have endeavored to make a moving picture of one of the best-worked-up of these cases. While the photography is not perfect, it helps make the lesions real. One advantage the camera has in showing lesions is that it can be placed in the most advantageous position and the results can be seen equally well by all viewing the picture. Being present at the postmortem and seeing the organs as they are removed and studied in relation to one another is the most effective way of using postmortem material, but since this is impossible good illustrations help a great deal. Besides, only a small group can see anything at a postmortem.

If childhood tuberculosis were not common and found in nearly every community by all physicians treating children, it probably would not be worth while considering the subject here. But since children continue to die with this disease, and since the way of eradicating tuberculosis in general is through a good understanding of tuberculosis in childhood, it

makes it worth while to devote some time to it.

Tuberculosis in children is usually manifested by enlarged tracheobronchial lymph glands, which, as a rule, produce no symptoms and can only be detected by x-ray examination. Tracheobronchial tuberculosis is a chronic affair, and in many cases the children do not suffer from it, the majority of them being well-nourished, with no suggestions of harboring an infection; and probably in most of these children the disease heals and they go on to natural development. In some, however, a crisis occurs—a sudden illness develops with fever, the symptoms of which are not definite for any specific disease, and diagnosis is practically impossible unless x-ray examination reveals enlarged tracheobronchial glands or an examination of the spinal fluid shows a condition typical of tuberculous meningitis. From the postmortem findings in a large number of these cases it is found that a **diffuse** infection takes place, sometimes causing more trouble in one organ than in another, and producing symptoms suggestive of some certain condition, like a bronchopneumonia or an abdominal condition, or meningitis.

Probably in all of these cases the crisis results from the fact that a caseous gland ruptures into a blood-vessel or lymph-channel and causes a blood-stream infection. A general infection develops, and if the organs of all these bodies were studied microscopically we would probably find the infection much more widely distributed than appears from gross examination. Nearly all cases manifest some sort of acute lung infection. In some it may be miliary tuberculosis, in others tuberculous pneumonia, in others circumscribed areas breaking down and forming cavities. Also there is usually infection of the liver and spleen, and in many cases meningitis. The following case is presented in detail as it covers nearly all phases of the subject:

Record No. 1653—City-County Hospital. Patient was a five-year-old female Mexican child, admitted June 24, 1934, and died July 5, 1934. Had been sick with fever twelve days before admission, and suffered with headaches two weeks previously. Admission diagnosis was typhoid fever, with possible pyelitis.

Temperature was 101 on admission, and two days before death it was 108, irregular, being high in the afternoon and low in the morning. Pulse rate was 90 on admission, and on the day the temperature was 108 it was too fast to count. Respirations were also rapid.

Laboratory findings: (June 24) white count was 15,000, urine was negative, Widal was positive. (June 27) Widal positive, urine negative, stool negative for typhoid.

(June 28) Spinal fluid clear, globulin positive, cell count 180, sugar absent, no organisms found.

(June 29) X-ray examination of chest showed a widened and thickened upper mediastinum, the mediastinal shadow to the apex on either side, with obliteration of the clear space between the right heart and the hilum. These findings suggested a mild enlargement of the tracheobronchial lymph glands, probably tuberculosis.

Child grew gradually worse and died on July 5. Postmortem examination was made on July 6, with the following findings:

Autopsy Report: Body is that of a well-nourished Mexican child. No external marks of violence.

On section there is a small amount of turbid fluid in the abdomen. Bladder distended, and upper surface of bladder quite deeply injected and thickened. No adhesions. Liver rather large and pale. No nodules of any kind present. Spleen about normal size, with numerous pin-point opaque pale areas in the surface. Kidneys show nothing abnormal.

On opening the chest both lungs are free; no excess of fluid. Lungs air-containing, slightly moist. Heart normal. Mediastinum somewhat enlarged. There are enlarged tracheo-bronchial glands which on section are quite noticeably enlarged and caseous. The retroperitoneal glands are not enlarged and there are no signs of trouble in the intestines.

Brain is examined and there are numerous pinpoint raised nodules over the surface of the posterior portion of the cerebral hemipheres. About the base there is a thick organized exudate.

Diagnosis: Tracheobronchial glandular tuberculosis and tuberculous meningigits. Tuberculosis of the spleen. Tuberculous peritonitis over the bladder. In other words, disseminated or diffuse tuberculosis.

Dissection of lungs shows in the right lung, near the apex, an enlarged pale grayish nodule about 7 mm. in diameter, fairly firm. This could be the scar of the first infection. In the lower lobe, at the bifurcation of the bronchi, there is an enlarged lymph gland about 10 mm. in diameter. Scattered through the right lung there are several pale pinpoint nodules which on microscopic examination show small groups of tubercles. In the left lung no nodules are found. However, there are small caseous glands at the hilum.

These findings show an old tuberculosis in the right apex, a more extensive glandular enlargement than was at first anticipated, and beginning miliary infection in the right lung.

This is one case out of a series of twelve. Many of the other cases died before being in

the hospital long enough to be studied and in some of the others the records are not as complete as on this one. The ages varied from three months to fourteen years, and all but one showed some lung involvement. This one was a case of meningitis and grossly the tracheobronchial glands were not noticeably enlarged. However, the glands around the bifurcation of the bronchi were not studied microscopically.

As to the clinical laboratory findings, the white count does not seem to be of much help, being in some cases high and in others low. The spinal fluid is very reliable, and if it shows an increased cell count with absence of sugar (with some cases even tubercle bacilli demonstrated) it points to a definite diagnosis. A positive Widal on the blood has been reported previously in cases of miliary tuberculosis, and more or less reaction in the Widal test can be expected in cases of miliary tuberculosis. So, too hasty a conclusion from a positive Widal should not be drawn in cases of this type.

As to making x-ray examinations of the chests of children, particularly those who are too young to cooperate, it is exceedingly difficult, for if a film is taken on expiration the mediastinum will be much larger than if taken on inspiration. Care must also be used in getting the child in proper position for a picture, because the best results are obtained with the child lying on his back, with the hands held over the head, care being taken to keep the head in true frontal position, for if it is turned sideways it throws the mediastinum partly to the side towards which the head is turned and the natural outline of the mediastinum will be reflected towards the side in which the head is turned and appear wider than it really is. Then, the exposure should be as short as possible—not over 1/20 of a second, and by watching the child carefully and taking it on inspiration a film can be obtained without showing motion. Care should also be taken to get a properly exposed film, for if it is over-timed a lot of the detail that we wish is burned out and the film is of no value for diagnostic purposes. In reading the film the mediastinum is of first importance, the clear space to the right of the heart next, and the ordinary lung markings of no importance. A wedge-shaped shadow of increased density extending from the mediastinum to the periphery indicates definite lung involvement, and probably a very serious condition.

In studying the lungs postmortem they should be fixed in formaldehyde and then sliced in thin slices with a sharp knife in order that small areas may not be overlooked. Oftentimes the miliary tubercles are too small to be seen with the naked eye and they may be detected only on microscopic examination.

There is presented a low-power photomicrograph of a small lymph gland taken from the left hilum. Its purpose is to show how numerous and near the lymph sinuses are to the tubercle, and how a tubercle might caseate and rupture into a lymph space, thus allowing tubercle bacilli to enter the lymphatic system and from there enter the blood-stream. Such a result would unquestionably cause a wide dissemination of bacilli.

When such a crisis occurs in a child with a tracheobronchial tuberculosis a wide dissemination of bacilli results, with miliary tubercles developing everywhere, producing a sudden and violent reaction which terminates fatally.

This is our first attempt at presenting a motion-picture film study, and the photography is not all that it should be. Of course the ideal condition would be to use colored film with a "talkie" attachment, and then the ideal could be approached.

I am deeply indebted to Dr. Butler, superintendent of the Hospital, for encouragement and suggestions, and to the Hospital staff for permission to use the material presented in this paper.

DISCUSSION

DR. R. O. BROFN, Santa Fe, N. M. (opening): We see more or less tuberculosis in schools near Santa Fe. I am interested in a school designed for boys under par physically and have there seen cases of tuberculous glands of the mediastinum, though there has not been a history of tuberculosis. Another thing, in addition to those mentioned by Dr. Waite that has struck me is that when they get an infection of any kind, they usually run a temperature longer than the others.

DR. F. D. VICKERS, (Deming, N. M.): Dr. Waite has been doing some wonderful work in getting up data and films of this kind and I want to congratulate him upon it.

DR. WAITE (closing): Referring to Dr. Brown's discussion, there is some question whether undernourished children are undernourished on account of tuberculosis or not. When a disease remains localized in the lymph glands, as years ago when children had it on the neck, it was called scrofula, but now that seems to have disappeared and I have not seen a case in a number of years. We know there are a good many en-

larged glands, but whether they are all tuberculous or not we are not sure. If the tuberculin tests are positive, we are pretty sure of tuberculosis, but if negative to the tuberculin test, there may be other things to give the enlarged glands. In the pictures I showed of the child with mediastinum enlarged, the margins are very sharp. You are not showing glands, but are showing a widening of mediastinum, yet assume that you have enlarged glands. There is a little bit of white nodule, but when the gland is cut you cannot get any gland that has calcium in it, yet there is something dense enough to show in the picture. When miliary tuberculosis gets well organized, we have snowflake mottling all over the lung. You cannot see the enlarged glands or little areas out in the lung. In the lungs occasionally there are localized areas that become caseous and break down. Thus disseminated, there may develop tuberculous meningitis. When there is wide dissemination, there is virulent infection. If one man could go into a hospital and order an x-ray of everything he is interested in, he would catch many of these cases. To carry on this subject and keep plodding at it and tell what it means is our ambition, but when we get this virulent tuberculosis with wide dissemination of tubercles, it is hard to tell which organ is going to cave in first and we are not sure that every infection in the body locates in the glands around the trachea and bronchi. We had a child die at the age of three months with much larger lymph glands than on the child whose picture was shown. We have not found the primary infection and I question sometimes if we have that primary infection in the lungs, with enlarged glands. I do not see why we have to have that before we have glandular tuberculosis. It may be mesenteric tuberculosis just as well around the trachea, but those around the trachea are the ones we can study.

TRANSURETHRAL PROSTATIC RESECTION

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(Presented before the New Mexico Medical Society, at its Fifty-second Annual Session at Las Vegas, N. M., July 19-21, 1934).

During the past three years, urological members of the medical profession have written so much regarding transurethral resection that general practitioners and surgeons have become confused by the vast amount of literature and are unable to decide as to the practical use of the procedure or the cases for which it should be used in preference to suprapubic or perineal prostatectomy. The purpose of this paper is to compile the knowledge I have received from other urologists, both conservative and radical, and thereby give an unbiased opinion, formed after my experience with more than two hundred transurethral prostatic resections.

A physician recently returning from Europe tells me that this operation for bladder neck obstruction is referred to as "an American fad" and that it has not been extensively employed in any of the larger urological services. Johns Hopkins Hospital still favors the perineal prostatectomy. The Mayo Clinic uses the transurethral operation in nearly all cases of bladder neck obstruction. Likewise, Kretschmer of Chicago, Ballinger of Atlanta, and innumerable prominent and well-balanced men have adopted its use almost exclusively and rarely perform suprapubic or perineal prostatectomies.

The question then arises—Who is right, and what general method is to be employed or suggested by the general physician whom the patient trusts with hope for an ultimate permanent recovery?

Historical references advise us that transurethral operations were first suggested and performed by Guthrie in 1836. A long list of surgeons since that time may be given due credit for improvements. Hugh Young, in 1909, developed his well-known punch operation which, in principle and practice, has been the most satisfactory instrument devised until the present resectoscope was invented by Stern in 1926 and perfected and presented by T. M. Davis in 1931. Since then the cystoscope makers and manufacturers of electrical instruments have been primarily responsible for what progress the urologists have made. Because of this commercial aspect, it is hard to estimate the number of patients either dead or suffering as a result of incompetent and indiscriminate use of this procedure. It is also difficult to estimate the number of patients for whom comfort has been gained who would have died of a major surgical procedure.

This operation has been heralded by urologists, physicians and laymen as a minor procedure until, at the present time, the prostatic sufferer believes that the procedure is so simple as to be regarded almost as a lark. Because of this publicity a larger number of prostatic sufferers consult urologists. From the increased numbers we are finding various degrees of pathology, ranging between very slight and extremely large obstructions. We are receiving patients who are not yet of the prostatic age, as well as old men who have been happily catheterized for years and are now senile or ready for the grave.

The direct advantage to bladder neck surgery may then be summarized:

1. This method is ideal for the resection of median lobes, small sclerotic prostates, fibrous contractures, prostatic bars, and postoperative adenomatous nodules.

2. Obstructive lesions may be removed from patients who could not undergo major radical surgery.

3. In carcinoma of the prostate, the patient may be made more comfortable by resection of the obstructing tissue than by suprapubic drainage or radical removal.

4. From an economic standpoint, the hospitalization period is shortened to from three to seven days of postoperative convalescence.

The principal disadvantages to resection are:

1. The entire prostate cannot safely be removed and recurrences may be an important factor. It is well known that adenomata do recur even after radical surgical removal; therefore, we may expect a higher percentage of recurrences following the transurethral operation. Inasmuch as resection has not been practised over a long period of time, statistics will not show the incidence of recurrence. Time alone will settle the question. However, it is the opinion of workers such as McCarthy and Davis that recurrence will not be greatly increased.

2. Stricture of the prostatic urethra does occur following resection. This is not true in every instance, but it is certainly true when a massive coagulation of the entire prostatic bed becomes necessary.

3. Postoperative urinary infection persists and, in my experience, it is of more clinical importance than infections following suprapubic prostatectomy.

4. The supposed simplicity of the procedure has encouraged incompetent and inexperienced cystoscopists to attempt resection, thereby discouraging and often leaving with an incontinence a number of patients who might well have survived a surgical prostatectomy.

The indications for the operation are the same as those for a prostatectomy; such as hypertrophy of both median and lateral lobes, median lobe hypertrophy, hypertrophy with collar fibrosis, sclerosis due to atrophy, or any bladder neck obstruction sufficient to give a residual urine of more than thirty cubic centimeters, which is accompanied by nycturia, difficult or painful urination. Large adenomata causing no residual urine and no important symptoms should be left alone.

The contra-indications to prostatic resection are:

1. Well advanced stricture of the anterior or posterior urethra or a congenital malformation of the urethra.

2. Massive prostatic enlargement where an instrument cannot be passed easily over the mass or through the entire prostatic urethra.

3. Large bladder stones, bladder tumors, or bladder diverticula of a surgical nature.

4. Advanced cardio-vascular pathology where the patient could not withstand a urinary chill or a drop in blood pressure.

The preoperative treatment is essentially the same as that for a suprapubic or perineal prostatectomy and may be divided into two distinct classes. First, early cases presenting a slight hypertrophy with very little residual urine may be operated upon immediately without preliminary care, provided there is little or no infection. The second class includes those advanced cases presenting extensive hypertrophy with a large amount of residual urine. Here, catheter or suprapubic drainage must be employed according to the amount of infection and the condition of the patient.

The older internists and surgeons have been amply impressed by the repeated warnings regarding preoperative preparation of prostatics; they recall reports of long series of prostatectomies with four and five per cent mortality. This low mortality cannot be equaled by transurethral resection unless adequate preparation is employed, and the forging urologist who disregards this teaching of our older fellows will throw all prostatic surgery into disrepute. A patient with residual urine, a poor myocardium, a poor urinary output, and so forth, must be given a chance and not hurried to the operating table. Drainage, fluids, rest, together with good medical advice are imperative to his life and postoperative comfort. Experience has taught us that postoperative comfort is one of the most important factors in the recovery of an older patient. A poorly prepared patient may often survive, but the surgeon deserves none of the credit.

Before transurethral resection, as well as before prostatectomy, we demand that a pa-

tient show all possible evidence of good health. He must have a fair urinary output, a nearly normal blood chemistry, a good appetite, and a more or less stabilized myocardium. His infection must be the minimum, or as nearly so as can be obtained in each particular instance. We require prolonged urethral or suprapubic drainage for patients having appreciable infection and more than ninety cubic centimeters of residual urine. We require that the temperature be normal for at least forty-eight hours, if such is primarily due to infection in the urinary tract. Each patient should have a comfortable bladder capacity of more than two hundred fifty cubic centimeters of urine.

So far as vasectomy is concerned, it should always be a routine procedure with prostatectomy and in transurethral resection of large prostates in older patients. The younger patient should not have vasectomy unless he has had repeated attacks of epididymitis during the period of preparation. We have not subjected all patients to vasectomy as a routine procedure, but find that ten per cent of our resection cases have had epididymitis.

The postoperative course, provided that the resection is properly done, is surprisingly simple so far as the patient's comfort is concerned. It is usually characterized as being without shock, without severe pain and without even the ordinary discomfort so common immediately following any surgical procedure. These patients are able to eat the day following the operation and often cannot believe it possible that the offending obstruction is relieved. Some never have bleeding and are able to void normally on the second or third day. The patient who has had an ideal transurethral resection should void on the third day, leave the hospital by the fifth day, and be able to come to your office by the end of the week following the operation. During the first week or ten days, he experiences a frequency and burning of urination, but he is able to enjoy comfort in the interim between urinations and does not lose his general feeling of well-being. Ordinarily, the pain is entirely relieved by the end of the second week. The urine becomes free from infection and the bladder resumes its normal capacity by the end of the eighth week. What postoperative discomfort is experienced is not dependent upon the amount of tissue removed, but varies according to the bladder capacity, the amount of coagulation, and the injury to the bladder mucosa or trigone. For instance, a patient with a small median bar will often have more pain and discomfort than one who has had resection of a relatively large adenoma.

So far as the operative technic is concerned, we have employed spinal, sacral and gas anesthesia. We find that sixty milligrams of neocaine dissolved in two cubic centimeters of spinal fluid is adequate. Patients with an extremely weak myocardium are given sacral anesthesia. Nitrous oxide is ideal where the obstruction is small and the time required for the resection is short. Where the resection requires considerable time and in an older patient without myocardial damage, we prefer spinal. Where there is severe myocardial damage, we use sacral, believing that there is less drop in the blood pressure.

In our series, we have used the McCarthy resectoscope and a tube machine with cutting current. The majority of resectionists are using the Davis-Bovie unit for current production and nearly all are well satisfied with its performance.

A No. 23 urethral catheter is left indwelling for three to five days, depending upon whether or not there is bleeding. This catheter is not irrigated unless such is necessary to remove small clots or particles of tissue. If the patient is not able to void freely on the fourth or fifth day, the catheter is replaced for forty-eight hours. If urination is not free and complete after that time, the patient is immediately returned to the operating table for resection of more tissue. A delay of this second resection often proves detrimental. Secondary resections are common and especially where the operator inadvisedly attempts the resection of an unusually large prostate. The only objectionable feature of returning the patient for a second resection is the repetition of anesthesia and the possible spread of pre-existing infection. In our series, we have been forced to repeat resection on ten cases the second time, and three cases a third time, before all residual urine disappeared. We have had no difficulty in resecting an adequate amount of tissue since adopting the technic of a trained assistant keeping one finger in the rectum to direct the operator in removing the necessary amount.

COMPLICATIONS

The most talked about complication is hemorrhage. This can usually be well controlled on the table at the time of operation, but under spinal anesthesia with a drop in blood pressure one frequently encounters increased hemorrhage after the patient is returned to his bed and the blood pressure returns to normal. If the hemorrhage is at all severe, it is our practice to reinsert the panendoscope and fulgurate the bleeding point. In most instances, the amount of hemorrhage and clotting may be well controlled by irrigations using a salt solution to which a slight amount of ephedrine has been added. Secondary hemorrhage has caused very little concern as we have used the tube cutting machine in this series. Where massive coagulation has been used, various operators have experienced late secondary hemorrhage which required the reinsertion of the instrument. As yet, I have not been forced to open a bladder suprapubically to stop bleeding or evacuate blood clots, although transfusion has been resorted to twice.

The mortality in a series of 225 cases is 3.2 per cent.

Numerous other complications of importance which may arise during the postoperative period are given in the order of their occurrence:

1. Epididymitis.
2. Pyelonephritis.
3. Urethral chills.
4. Pelvic cellulitis (in one case).
5. Hemiplegia (in one case).

The technical difficulties of transurethral resection are usually mastered during the performance of the first fifty cases. I have often wished that I might repeat the early series, as a few of these patients still have urinary infection, slight amounts of residual urine and, in one instance, incontinence. The case of incontinence, however, followed the resection of a small portion of adenomatous tissue left in at the time of a suprapubic prostatectomy. It is especially difficult for the beginner to visualize and remove an adequate amount of tissue from the floor of the prostatic urethra. If he be timid in his resection, the patient will continue having a certain amount of urinary retention and continued infection. If he be too bold, he is apt to go through the prostatic capsule, producing a pelvic cellulitis or a urethral-rectal fistula. Resection of the lateral lobes entails the same dangers, but here there is usually sufficient tissue that the operator would have difficulty in penetrating the prostatic capsule. One of the most common accidents throughout the country seems to be rupture of the bladder wall. Such an accident is due to carelessness on the part of the operator or his assistant in allowing too much gravity to the flow of water into the resectoscope.

In conclusion, it is fair to say that transurethral resection of bladder neck obstruction plays a very definite part in urological surgery. It is not applicable to large prostatic tumors, yet it is fair to say that ninety per cent of the hypertrophies may be removed by one proficient in the use of the resectoscope. If one has not had considerable experience with this treatment, he should first limit his resections to the smaller adenomata and to median lobe hypertrophies. If the patient does not void freely following removal of the catheter, a repetition of the resection should not be delayed.

Transurethral resection on properly selected cases and properly performed may be considered a minor surgical procedure. Therefore, this method is becoming more popular because of the relief given a poor operative risk. It will never supplant suprapubic prostatectomy for those cases showing enormous hypertrophy where there are such complications as urethral stricture, bladder stone, tumor, and diverticulum. The percentage of recurrence cannot be tabulated at this time because a sufficient period has not elapsed since this operation became so generally adopted. The popularity of this operation during the past three years has probably increased because of the short period of hospitalization requisite to good end results.

DISCUSSION

DR. ROBERT F. THOMPSON, (El Paso, Texas): Dr. Wear is to be commended for his most exhaustive consideration of this interesting subject. It is a topic which has caused great discussion in urological circles in the past few years since prostatic resection was made available to the profession. One faction is enthusiastic over this new procedure and believes that all types of prostatic obstruction should be resected, while the more conservative group still believe enucleation is the procedure of choice in most instances with resection being reserved for special cases.

Our experience with resection has not been as great as Dr. Wear's. He mentions 200 cases. Our series is a little less than half that number.

I agree heartily with everything Dr. Wear said in his paper but I am not as enthusiastic over

the procedure as he is, possibly, in its applicability to all types of prostatic obstruction. When the resectoscope first appeared we started resecting all prostatic cases, but later as we studied the results and correlated our findings and observations, as well as those of our contemporaries, we began to get away from resection and return more to enucleation.

I think resection is a boon to certain kinds of cases, namely hopeless cancer case who already has metastases and who can be put in comfort concerning the urinary stream for the remaining short while he has to live, and to the very feeble, debilitated patient who could not be safely subjected to operation; to the median bar cases, and to the sclerotic types of obsruction.

Recently we had an old man 81 years of age under our care. He was most feeble with damaged heart and kidneys. It was not deemed wise to subject this patient to any extensive operative procedure. In fact, he had been sent home from a large clinic who dared not operate on him. We decided to do a quick resection in an endeavor to relieve his almost complete obstruction. Under spinal anesthesia a speedy resection was effected on the obstructing portion of the glands, limiting the time of operation to 30 minutes. The result was very gratifying.

Dr. Wear mentioned the adenomas which contain encapsulated abscesses as being potentially dangerous for the procedure of transurethral resection. We feel that such cases should be enucleated. In this way the obstructing prostate and the abscesses are removed in toto. We also believe that the large adenomas in general are best dealt with by enucleation, especially those which have intravesical extension to a marked degree.

We have not been as fortunate as Dr. Wear regarding hemorrhage following resection. In two instances we have had to open the bladder on account of bleeding. In one case the extensive bleeding started nineteen days after resection and in the other, a few hours afterward. In both instances we enucleated the prostate once the cystotomy had been done, and a hemostatic bag was inserted. In both cases the bleeding points were seen to be at the neck of the bladder from whence the resected tissue had been removd.

Recently we have employed the intravenous injection of very dilute hydrochloride acid (1-500, 1-1000) before and after resections in an effort to prevent, or reduce to a minimum, troublesome bleeding, as advocated by Shropshire of Birmingham. We have only tried this on a few cases but from our limited observation this procedure appears to have merit.

Unquestionably, transurethral resection is a most valuable addition to the urological armamentarium. But we are not as enthusiastic over it as we were when it first appeared. We believe it is the procedure of choice in selected cases, but not referable to all types of protastic obstruction; that the type of procedure should be fitted to the patient after thoroughly studying his individual problem, and that in most instances, excepting those enumerated above, enucleation is still the method preferable in the majority of instances.

DR. WEAR (closing): I wished to convey one thought regarding transurethral resection; it is an operation that can be done in nearly every instance of prostatic hypertrophy and is, therefore, indicated in the especially poor operative risk or those of so advanced age that they probably will not live long enough to have a recurrence of bladder neck obstruction.

Resection should not be done on younger men with extremely large prostates who have the prospect of many years of life.

Transurethral resection has become popularized, particularly because of economic reasons, as patients leave the hospital in a short time with a corresponding low hospital cost. Resection in the future will continue to be popular for those patients having small bladder neck obstructions and for old and debilitated men.

THE SIGNIFICANCE OF THE BLOOD PICTURE IN ACUTE SURGICAL INFECTIONS

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(Read before the New Mexico Medical Society at its Fifty-second Annual Session, at Las Vegas, N. M., July 19-21, 1934).

The significance of the blood picture in acute surgical infections is too often not given proper consideration. Occasionally it is not properly interpreted, and again it is given too much precedence over the history, clinical symptoms and physical findings.

One single blood count does not always give a great amount of information. A number of factors must be taken into consideration; particularly the general clinical picture the patient presents and the time as regards the course of the infection at which the count is made. Repeated counts made at intervals of several hours, however, give us information which not only aids in the diagnosis, but the prognosis as well.

In considering only acute surgical infections we are primarily interested in the blood picture presented by the leukocytes which normally with an empty stomach vary between 5000 and 8000 to the cu. mm. of blood. Regarding the nomenclature and classification of some of the leukocytes, particularly those found in pathologic conditions, there is much confusion. I shall try in this discussion to use the terms most commonly used in this country to describe these cells and shall avoid getting into the tangled web of conflicting theories of histogenesis. One should thoroughly familiarize himself with the five types of leukocytes found in normal blood; the lymphocytes, endothelial leukocytes or monocytes, basophils, eosinophils and neutrophils, as well as the four types of neutrophils (myelocytes, juvenile, stabs and segmented nuclears) described by some, which are found in disease. Recent studies have shown that there are in-

dividual variations in the total count as well as the differential due to climate, altitude, and so forth. One should hesitate to base diagnostic conclusions unless the normal has previously been determined for that individual.

The lymphocytes are normally found to constitute from 25 to 33 per cent of all leukocytes, though they may be as low as 15 or as high as 45 per cent in apparently healthy individuals; so far as we now know they show no variations in acute surgical infections.

The monocytes, or endothelial leukocytes as they are called by some, include the two types which have long been known as large mononuclear and transitional leukocytes. They are found normally to constitute from two to six per cent of all leukocytes and probably their only value in acute surgical infections is in the differentiation of typhoid and possibly Hodgkin's disease where they usually show a definite increase.

The basophilic leukocytes, or mast cells, are probably of no value whatever in acute surgical infections. They normally constitute from .25 to .5 per cent of all leukocytes.

Eosinophilic leukocytes or eosinophils, which constitute from one to four per cent of all leukocytes found in normal blood are of definite value which is often overlooked. Early in an acute infection eosinophilia should aid in differentiating parasitic conditions as well as scarlet fever, but their chief value, as was pointed out by Robinett recently, is later in acute surgical infections where an eosinophilia definitely points to a satisfactory convalescence and leads to a good prognosis.

The neutrophils or polymorphonuclear neutrophilic leukocytes constitute from 60 to 70 per cent of all leukocytes found in the blood of the average healthy individual. An occasional apparently normal healthy adult may have as low as 40 or as high as 80 per cent. Children average from about 35 in the first year to about 50 per cent in the tenth year. Any marked increase in their number always produces an increase in the total leukocyte count. Pus corpuscles belong almost wholly to this variety.

In acute surgical infections, particularly appendicitis, a comparison of the percentage of neutrophils with the total count gives more information than a consideration of either alone. In general, the percentage indicates the severity of the infection, or more correctly, the degree of toxic absorption; while the total count indicates the patient's power of resistance. With a moderate infection and normal resisting powers the percentage of neutrophils and total count should increase proportionately. A high percentage and low total count indicates a virulent infection or low resisting power or both. Gibson has suggested a graphic chart to represent this curve which I shall presently show, and I believe it would be well if it were incorporated in all hospital laboratory forms. Its arrangement is purely arbitrary, but it will be found very helpful in interpreting counts. An ascending line from left to right indicates an unfavorable prognosis in proportion as the line approaches the vertical. All fatal cases show a rising line. A descending or horizontal line indicates a very favorable prognosis. Wilson has devised a formula which I shall also show which expresses the same idea by a numerical index. It is as follows:

IR=(T-10)-(P-70), IR being the INDEX OF RESISTANCE, T the total leukocyte count expressed in thousands, and P the neutrophil percentage. Under normal conditions the index would be zero or near it. In the absence of an acute infectious disease or blood stream infections the neutrophil percentage of 85 or more points to gangrene or pus formation somewhere in the body. Exceptions occur chiefly in moribund cases, children, typhoid and tuberculous infections.

Arneth's index of neutrophil classification I am going to pass over because of its many modifications and criticisms. Von Schilling has developed a much simpler classification which has become popular in America during the past few years. His technic can be applied in the course of an ordinary differential count by observing four different types of neutrophils, myelocytes, juvenile cells, (metamyelocytes having many of the characteristics of the myelocytes but with the indented or bean-shaped nuclei), single lobed neutrophils, (called by von Schilling "stab" cells), and neutrophils with more than one lobe in the nucleus, (called segmented nuclears). A differential count with this classification constitutes a Schilling hemogram, which I shall show with one of the slides. The dividing line in the Schilling count falls between the stab

cells and the cells with the segmented nuclei. In normal blood there are no myelocytes or juvenile forms and only 3 to 5 per cent stab cells. A shift to the left is seen when the normal number increases on the left of the dividing line. A regenerative shift to the left with a high total white count occurs in acute septic infections, appendicitis, and so forth. The prognosis may be made by repeated counts, a continuous and increasing shift to the left being unfavorable, while a shift to the right is an encouraging sign. There is also a degenerative shift to the left with a low total white count and a classification has been devised by Kohl and Sonnenberg which applies to one disease only, appendicitis. They count all cells on the left of the line in 100 neutrophils and classify as follows: 11-25 per cent as first degree, 25-45 per cent as second degree, and 45-60 per cent as third degree. These degrees supposedly harmonize very well with the severity of the case, operative indications, and with the prognosis.

PUBLIC HEALTH NOTES

J. ROSSLYN EARP, DR. P. H.

Director New Mexico State Bureau of Public Health.

AN INFECTIOUS MIDWIFE

Certainly the public and perhaps even the profession tend to associate visible dirt with invisible pathogens. This results in overemphasis on the danger of visible dirt and lack of precaution against the invisible pathogens, when they happen to be living in a dirt-free human environment. I adduce as evidence the story of midwife A told in a recent number of The Lancet[1].

Midwife A is a well-trained English midwife practising with every prescribed precaution for assuring sterility. Nevertheless, during the last two years she has had to report a slight pyrexia during the puerperium in several of her cases. Under the careful British system of supervision, each of these cases was investigated, but no technical fault was discovered and the midwife was allowed to continue in practice. From June to September, 1933, sepsis among her cases became the rule and one of them died therefrom. Since September, 1933, she has ceased to work as a midwife. Swabs taken from her throat September 14 and 29 showed streptococci (nonhemolytic), staphylococci, and M. catarrhalis. However, she was in ill health and complained of recurrent tonsillitis, so was admitted to a London Hospital. There a large crypt was found in one of her tonsils and in the crypt a plentiful supply of pneumococcus type I. Incidentally, the child next to her in the hospital ward developed pneumonia. Sixteen patients in the same ward developed sore throats. Midwife A is still debarred from practice, even after tonsillectomy she still has pneumococci in her throat.

The source of infection is not always a midwife. It can just as easily be a nurse, or even a doctor—even it may be a doctor gowned and gloved. For who has not observed the completely sterile surgeon holding his sterile hands away from the danger of passing skirts and in the direct line of fire of his own breath?

And one wonders, if it takes two years to catch the offending germ in the throat of a supervised midwife whose every case of puerperal pyrexia is investigated by her supervisor, how much longer might it take to catch the offending germ in the throat of a doctor whose suspicions are directed against the visible dirt in the home far more readily than against a hypothetical crypt in his own tonsils?

DR. CLARKE'S REPORT

Doctor Clarke's report on Syphilis in New Mexico[2] will probably be published before these notes. It is also probable that the publishers, the New Mexico Tuberculosis Association, will present a copy to each doctor in the state. Nevertheless I venture to reprint here one table from the report:

	Per 1,000 Population
Cases of syphilis reported in one year, 1933, to the State Bureau of Public Health	0.8
Annual incidence of syphilis based on a census of newly treated cases, Nov. 1933	7.9
Cases of syphilis reported in the census as under treatment on Dec. 1, 1933 (See Chap. II.)	2.4
Actual frequency of syphilis as shown by 5,237 blood tests Dec., 1933	50.9

This little table contains so much information and gives one so furiously to think, as the French would say, that it needs no comment from me.

REFERENCES

1. Collins, F. G.: The midwife as a carrier of infection. The Lancet 2:718 (Sept. 29), 1934.
2. Clarke, Walter: Syphilis in New Mexico. The New Mexico Tuberculosis Association, 1934.

MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST

Proceedings of the Twenty-first Annual Meeting, El Paso, November 22-24, 1934.

With this meeting the Association can truly be said to have "come of age." In the surge of new enthusiasm and new purpose evident in every activity, in heavy increase in membership, in new vision and new plans started, in the largest attendance ever recorded, with one possible exception, the Association gave every evidence of having left behind its period of development and of setting forth earnestly to attain its goals.

The opening meeting is always a critical one, with the confusion of registration, with friends greeting each other, with late arrivals getting settled, is always a matter of concern to the officers whether they will have an audience for the first speakers. It was even more than usually critical this year, because the opening session was an important one, with three of the important addresses of the conference on the program for the forenoon. So it was an auspicious beginning when the first General Session was called to order by Dr. W. A. Gekler (Albuquerque), president, at 10:10 a. m., and an attentive audience of more than fifty, quickly increasing to about seventy-five, had gathered to hear the symposium on Medical Economics. An audience of fifty to hear the opening address was unprecedented.

Dr. Gekler first presented a telegram from Dr. R. G. Leland, Director of the Bureau of the American Medical Association, stating that the pressure of work following the meetings of the Committee on Economic Security in Washington, prevented his coming to El Paso, to give scheduled address.

Dr. Gekler then delivered the President's Address on "Medical Economics." The theme of this address was a plea for the medical profession to keep control of its own affairs, govern its own practices, and make its own rules. A novel proposal was the formation of a "State of Medicine" as the forty-ninth state. Dr. Gekler called attention to the fact that the Constitution of the United States does not provide that states must necessarily be geographical limits, but they could also be vocational or occupational. Only when the medical profession has power to govern itself in all its aspects can we cope with irregular practices and have full control over medical practice.

Dr. Holman Taylor, Secretary of the State Medical Association of Texas, Fort Worth, followed with his address on "Special Phases of Medical Economics." Dr. Taylor discussed, at some length, the development of the medical "Guild" and the possibilities of again attaining to such a degree of organization. He stated that the Medical Guild was but another name for Dr. Gekler's "State of Medicine." Dr. Taylor's paper presented many problems and discussed possible solutions.

In the general discussion, Dr. J. J. Gorman, President-Elect, took the chair. He expressed the appreciation of the Program Committee (of which he was chairman) to Dr. Taylor for coming and helping in this symposium. In preparing the program, Dr. Gekler had requested a session on medical economics, and the interest shown had abundantly justified this. He called on three men to open the discussion: Dr. F. P. Miller, formerly president of the State Medical Association of Texas, Dr. W. W. Watkins, Secretary of the Medical & Surgical Association, and Dr. Spear, a visiting physician who had practised in Berlin from 1924 to 1935. Dr. Spear gave an interesting account of his experience under the German system. Dr. A. K. Duncan of Douglas continued the discussion, which was then closed by Dr. Gekler and Dr. Taylor.

At luncheon, groups gathered in four rooms in the El Paso Club, on the tenth floor of the hotel, for round table discussions. Room No. 1, Dr. John de J. Pemberton, of the Mayo Clinic, spoke and conducted a conference of Hyperparathyroidism. In Room No. 2, Dr. J. H. Musser of New Orleans, spoke on Mechanism of Jaundice. In Room No. 3, Dr. J. R. Caulk, of St. Louis, spoke on "The Ureter." In Room No .4, Dr. Geo. Piness, of Los Angeles, conducted on The Allergic Nose and Throat as Encountered by the Oto-Laryngologist and Internist.

The General Session reconvened at 2:20 p. m., with Dr. Gekler presiding. Dr. J. H. Musser, of New Orleans, was introduced and gave his paper on "Borderline Medical and Surgical Conditions."

Dr. John R. Caulk, of St. Louis, spoke on "Transurethral Surgery;" for lack of time his moving pictures had to be deferred to another period.

The paper of Dr. George Goodrich, of Phoenix, on "Diagnosis and Treatment of Early Cholecystic Disease," was read by Dr. Robt. Flinn, of Phoenix, in the unavoidable absence of Dr. Goodrich. This paper was discussed briefly by Maj. H. C. Dooling, Director of the Medical Service, Beaumont Hospital, with Dr. Flinn closing.

A business meeting of the Association, provided for in the program, was called to order at this time. The secretary stated that the Committee on Reorganizaion appointed by resolution at the 1933 meeting, was submitting a revised Constitution and By-Laws. The Constitution could not be acted upon at this meeting, but the By-Laws could. Copies of these had been sent to every member two weeks prior to this meeting, and if these had been read by the members it was possible they could now vote upon them without discussion, so that important committees therein provided might be appointed. In order to obviate discussion at this time, the secretary moved that the By-Laws as submitted be adopted, with the understanding that a special committee be appointed to review these and submit a final re-

port on them, as well as on the Constitution, at the final session on Saturday, Nov. 24th. If no important changes in the By-Laws were recommended by this committee, they would stand; if changes were recommended these could be considered and adopted or rejected. This motion was sconded and carried and the chair announced the following committee to report on the Constitution and By-Laws:

Dr. D. M. Davis, President-Elect, chairman; Drs. Rheinheimer and Egbert from El Paso, Van Atta from Albuquerque and R. D. Kennedy from Arizona.

The Committee on Necrology was found to be unnecessary this year, as no member of the Association had died since the last annual meeting.

Committee on Resolutions was named: Drs. Gekler (chairman), J. W. Laws (El Paso) and A. K. Duncan (Douglas).

Committee on Nominations was named: Drs. R. B. Homan, Sr., (chairman), J. W. Morris, (Safford) and Mendelson (Albuquerque).

The important committees on Program and Membership were left for the new Executive Committee to appoint.

After adjournment, members and guests were taken to a barbecue social gathering at the polo grounds owned by Drs. Goodwin and Multhauf, located in the Lower Valley. The barbecue dinner, with cowboy orchestra furnishing music about the campfire was very enjoyable; later the group went to amusement places on both sides of the border for dancing and other festivities of their choice.

On Friday morning, at eight o'clock, Dr. J. H. Musser held a clinic on syphilitic heart disease in the Crystal Ball Room, using patients furnished by members of the El Paso County Society. Several of these were discussed in detail.

Dr. J. R. Caulk, at the same hour, in the Tea Room, showed moving pictures of transurethral surgery and held clinic on Urology.

Dr. H. L. Baum, of Denver, at nine o'clock, held clinic in the Crystal Room, on Plastic Surgery, using lantern slides, moving pictures and diagrams on black-board.

Dr. George Piness, at same hour, in the Tea Room, held a clinical discussion on Allergic Conditions in Children, using case histories furnished by members of the El Paso County Society.

The General Session was called to order at 10:30 by Dr. Gekler, and Dr. George Piness, of Los Angeles, gave address on "The Problems in Gastro-Intestinal Allergy," talking from notes.

Dr. John de J. Pemberton, of The Mayo Clinic, also talked from notes and slides on "Advances in the Diagnosis and Treatment of the Thyroid Gland."

Dr. R. W. Mendelson, of Albuquerque, discussed "Amebiasis," using original drawings in lantern slndes.

At the luncheon period, round table discussions were again held. Dr. John de J. Pemberton completed his discussion on the Thyroid, which had been cut short by lack of time in the forenoon session; he discussed x-ray and medical measures in treatment, offering little encouragement to those who advocate either. Dr. J. H. Musser again conducted the medical discussion, Dr. John R. Caulk the discussion on Urology and Dr. H. L. Baum the conference on Oto-Laryngology.

The afternoon session was called to order at 2:15, by Dr. Gekler. The first paper was by Dr. J. W. Hannett, of Albuquerque, on "Postoperative Intestinal Obstruction." Discussion was given by Major G. V. Emerson, Director of the Surgical Service at Beaumont Hospital.

Dr. Dudley Smith, of San Francisco, then gave paper on "Cancer of the Rectum and Recto-Sigmoid," showing lantern slide illustrations.

Dr. Harry Leigh, of El Paso, read paper on "Variations of Functional and Mineral Metabolism in Pregnancy and the Clinical Importance to Obstetrical Management."

Following the adjournment of the Scientific Session, many of the members and guests enjoyed the hospitality of the Homan Sanatorium, where open house was held beginning at 4:45 p. m.

In the evening, the Annual Banquet and Dance was held in the Hotel Hussmann. About 200 members, guests and their ladies enjoyed this occasion, presided over by Dr. S. A. Schuster, as toastmaster. Following the dinner, toasts were responded to by Drs. J. H. Musser of New Orleans, George Piness of Los Angeles, H. L. Baum of Denver, Dudley Smith of San Francisco, John de J. Pemberton of Rochester, E. W. Rheinheimer, for the El Paso County Medical Society and Mrs. Ralph Homan for the El Paso Woman's Auxiliary, Drs. W. A. Gekler and David M. Davis for the Association. Floor was then cleared for dancing which engaged the attention into the morning hours.

At the Saturday morning session, three clinical discussions were given beginning at eight o'clock. Dr. J. H. Musser discussed Splenomegaly; Dr. John de J. Pemberton discussed Diseases of the Spleen amenable to surgery, and Dr. Dudley Smith discussed Diagnosis and Treatment of Common Rectal Disorders.

The General Session convened at 10:35 a. m., with Dr. Gekler in the chair. The first paper was by Dr. Leslie M. Smith, of El Paso, on Lymphopathia Venerea," illustrated by lantern slides. This was discussed by Major Harold V. Raycroft, Director of Urological Service at Beaumont Hospital, by Dr. R. W. Mendelson of Albuquerque, and by Dr. Dudley Smith who discussed the rectal syndrome of this condition.

Dr. H. L. Baum, of Denver, talked on "Laryngo-Tracheo-Bronchitis;" members of the Association interested in this subject can secure reprints from Dr. Baum covering the material given in this talk.

The closing paper of this session was by Dr. Fred R. Harper, of Tucson, on "The Development and Healing of Peptic Ulcers," giving results of

perimental work on dogs. This paper was discussed by Major James M. Williams, Director of Radiological Service at Beaumont Hospital and Dr. F. D. Garrett of El Paso, with Dr. Harper closing.

Scientific sessions were adjourned, with closing business meeting called for 2 p. m.

Following the luncheon in the El Paso Club, the general business meeting was called to order by Dr. W. A. Gekler. The incoming president Dr. David M. Davis, of Phoenix, was introduced and delivered a brief address on "The Relation Between Contracture of the Vesical Orifice and Chronic Infections of the Prostate and Bladder," showing lantern slides.

The Report of the Secretary-Treasurer was called for and given as follows:

"The matter of chief interest in the Secretary's report is that for the first time in three years we can report an uptrend in our membership, as the result of our membership campaign plus the interest aroused by the excellent meeting provided this year by the Program Committee. We have to report through the Board of Censors, about seventy new applicants for membership. Our membership roll at this writing stands:

Paid up members, 141. Delinquent members, 98. of whom 21 are delinquent for 1934 only. New applicants, 70; members for endorsement, 9. Total 316.

It is hoped that under the new plan and program of the Association all, or practically all, of the 98 delinquent members will be conserved. The Committee on Re-organization will recommend that all dues except those for 1934 be remitted, and dues collected from these delinquent members for 1934 and 1935. Among the new applicants are ten from Old Mexico. Pending the adoption of the new Constitution next year, the Association has voted that we authorize the Board of Censors to accept for "Affiliate Membership" applicants who can otherwise qualify but who are not members of some county or state society; there are several of these.

Recent developments in securing new applicants are significant in showing that this can be done and there seems no good reason why our membership should not reach 500 within the next two years.

With regard to finances; when the dues were dropped to $3.00 for 1934 and only 140 members paid up—making a total of $420.00 in dues for the year, we were immediately bankrupt. When $2.00 per member is to be paid to Southwestern Medicine, and with clerical exxpense of $150.00 for the year, these two items alone were greater by $10.00 than our total income for the year from dues. When stationery, programs, printing, heavy postage on our membership campaign and other such items are added, we have an expense well above $500.00. As the result, Southwestern Medicine has done again what has been done for several years,—turned back to the Association the dues which were paid. As a matter of fact, the Association has contributed nothing this year to Southwestern Medicine, and has had a portion of its expense borne out of the funds of that journal.

This situation we hope will be altered next year, and it is proposed that our Publication Committee will make a lump sum payment to the journal for acting as the official journal of the Association and publishing its proceedings. This will do away with the criticism which has been offered that members of the other three constituent organizations pay a double subscription to the journal when they join this Association. That was true only on paper, but even that appearance will be done away with in the future, if the arrangements to be proposed by the Publication Committee are adopted.

The secretary wishes to present for official endorsement, nine names of applicants who have already paid dues for 1934, and who have been given the privileges of members:

Dr. Robt. S. Flinn, Phoenix, Ariz.
Dr. J. W. Hannett, Albuquerque, N. M.
Dr. R. W. Mendelson, Albuquerque, N. M.
Dr. F. R. Harper, Tucson, Ariz.
Dr. J. Rossyln Earp, Santa Fe, N. M.
Dr. R. A. Wilson, Tucson, Ariz.
Dr. Juan E. Urriolgoitia, Nogales, Sonora, Mex.
Dr. H. B. Steward, Coolidge, Ariz.
Dr. G. B. Steward, Florence, Ariz.

Upon motion, seconded and carried unanimously, these applicants were confirmed as active members of the Association.

Upon motion, seconded and carried, the report of the secretary-treasurer was approved.

The report of the Board of Censors on new applications was presented by Dr. W. R. Jamieson. He first presented the applications of the following doctors who reside in the Southwest, but who are not members of a county or state organization, calling for any objections to these that any member might voice. These were presented under the provisions of the resolution for a temporary Affiliate Membership pending action on the Constitution,—such to become active members automatically should the new revised Constitution be adopted.

L. C. Alston (col.), residing in Mesa, Ariz.
I. B. Ballenger, Albuquerque, N. M.
Joseph Balz, Sacaton, Ariz., (U.S. Ind. Service).
Carroll C. Creighton, Flagstaff, Ariz.
Sadakagu Furugachi, El Paso, Tex.
K. M. Gilbert, Chandler, Ariz.
B. L. Johns, Fort Bayard, N. M.
G. H. LaBerge, Payson, Ariz.
L. P. Lufty, Clemenceau, Ariz.
R. V. Parlett, Sacaton, Ariz. U.S. Ind. Service).
H A. Patterson, Fort Stanton, N. M.
Hugh A. Rasmussen, Komatke, Ariz. (U. S. Ind. Service).
J. E. Shearer, Whipple, Ariz. (Vet. Adm.)
Joseph D. Vertin, Tucson, Ariz. (CCC).
L. Cody Marsh, Tucson, Ariz.
Fred Loe, Phoenix, Ariz. (U.S. Ind. Service).
Reed D. Shupe, Phoenix, Ariz.
F. A. Kennedy, San Carlos, Ariz. (U. S. Ind. Service).
Carl Sugar, Phoenix, Ariz. (State Hosp).
Kenneth A. Herbst, McNary, Ariz.

Upon motion, seconded and carried it was voted that the application of Dr. L. C. Alston of Mesa be not accepted.

There was some discussion regarding the application of Dr. Sadakagu Furugachi, but Dr. Jamieson said the Board of Censors knew of no reason for not including him in the group.

Motion was then made, seconded and carried that these 19 applicants be accepted for the Affilate Membership, pending action on the Constitution. (Note: Should any of them perfect affiliation with a county society during the coming

year, that would automatically advance them to active membership).

The Board of Censors then reported that they had reviewed the following applications and were recommending them for active membership on the basis of their county and state society affiliation as credentials:

J. J. P. Armstrong, Douglas, Ariz.
F. W. Butler, Safford, Ariz.
M. H. Chavira, Madera, Chih., Mexico.
A. K. Duncan, Douglas, Ariz.
L. O. Dutton, El Paso, Texas.
Loren F. Elliott, Albuquerque, N. M.
Luis Raul Flores, Chihuahua, Chih.
Guy C. French, Phoenix, Ariz.
C. H. Gellenthein, Valmora, N. M.
Juan S. Gonzales, Nogales, Ariz.
J. W. Gothard, Holbrook, Ariz.
A. L. Gustetter, Nogales, Ariz.
Jack R. Hild, Douglas, Ariz.
Donald F. Hill, Tucson, Ariz.
Raymond P. Hughes, Anthony, N. M.
G. B. Irvine, Tempe, Ariz.
B. A. Johnson, Santa Rita, N. M.
J. C. Keeley, Parral, Chihuahua, Mex.
M. L. Kent, Mesa, Ariz.
Leslie R. Kober, Phoenix, Ariz.
Chas. H. Laugharn, Clifton, Ariz.
J. P. McNally, Prescott, Ariz.
James R. Moore, Phoenix, Ariz.
Luciano Morales, Camargo, Chihuahua, Mex.
E. M. Morgenstern, Mexico City, D. F.
O. I. Nesbit, Espanola, N. M.
F. W. Parrish, Bowie, Ariz.
C. D. Pastor, C. Obregon, Sonora, Mex.
J. W. Pennington, Phoenix, Ariz.
Jose de la Fuente Riveroll, Hermosillo, Sonora, Mexico.
Mayo Robb, Phoenix, Ariz.
Leopoldo Sanchez de Cima, Mazatlan, Sin., Mex.
W. F. Schoffman, Phoenix, Ariz.
Eugene P. Simms, Alamogordo, N. M.
Robt. M. Stump, Winslow, Ariz.
Geo. C. Truman, Mesa, Ariz.
W. P. Tucker, Ray, Ariz.
Carroll L. Womack, Artesia, N. M.
Geo. C. Rubel, Buckeye, Ariz.
Ignacio Alcaraz, Los Mochis, Son., Mex.
Nicolo V. Alessi, Douglas, Ariz.
Robt. Ferguson, Bisbee, Ariz.
Robt. K. Hilton, Clemenceau, Ariz.
Edw. Hoehn, Phoenix, Ariz.
Chas. H. Hunt, Bisbee, Ariz.
Carl E. Jumper, El Paso, Tex.
Vivian Tappan, Tucson, Ariz.
O. E. Brown, Tucumcari, N. M.

Upon motion, duly seconded and carried unaimously, these 48 applicants were voted into active membership.

The secretary then asked the sanction of the Association upon any additional applicants which may be approved by the Board of Censors, in order to facilitate the membership campaign and to entitle them to 1935 membership.

Upon motion, duly seconded and carried unanimously, the Board of Censors was authorized to certify as active or affiliate members any applicants whose applications are secured by the Membership Committee and presented to them, and whose credentials they find to be satisfactory. This to apply only to 1935 memberships.

Motion was made by Dr. R. F. Palmer that the efforts put forth and the results obtained in securing these new members be given the cordial thanks of the Association. Motion was carried.

Report of the special committee on re-organization gave their report on the proposed new Constitution and By-Laws. Since no action could be taken on the Constitution at this time, and since copies of the propesed revisions have been sent by mail to all members, we will call attention only to certain changes from the copy mailed out.

A change in name to "Southwestern Medical Association" is proposed.

Proposal for three classes of members: Active to include any reputable practitioners in the southwest, whose credentials are approved by the Board of Censors. (This does away with the present requisite that members must show prior membership in a county society or state association). Associate, for practitioners residing outside of the Southwest district; honorary for those whom the Association wishes to honor.

Under officers, change to first and second vice presidents.

Under meetings, change December 31 to Feb. 28. Add the sentence,—"The place of the Annual meeting shall be at El Paso, with the provision that should some other city of the southwest request to have the annual meeting held there, the Association may vote to hold the meeting of that year in such city."

These represent the important changes in the Constitution, and due notice of them will be sent out prior to the 1935 annual meeting, at which time they will be voted on.

The By-Laws have already been adopted, subject to such changes as may be suggested by the Committee.

A change in wording of Section 3, Article I, so that the last sentence will read, "In the event of illness, death or absence of the president, the first vice president shall serve, and in the failure or inability of the first vice president to serve, the second vice president shall assume the office and duties."

In Section 5, Article I the last sentence changed to read, "They shall report their recommendations regarding such applicants to the first business nession of the Association at the annual meeting."

Under Section 5, Article II, referring to the report of the Committee on Nominations, the last sentence to read, "This report shall be made at the business meeting on the second day of the annual session," and so forth.

Under Section 1, Article II, the sentence referring to the report of the Board of Censors to read, "Such applications shall be transmitted to the Board of Censors, who shall investigate and report their recommendations to the first business meeting of the Association" and so forth.

Motion was made, seconded and carried that the By-Laws, as amended, be adopted. (Constitu-

tion and By-Laws are printed elsewhere in this issue).

Report of the Committee on Resolutions was called for and presented by Dr. W. A. Gekler, chairman, as follows:

Whereas, the present session of the Medical & Surgical Association of the Southwest has been one of the best in its history; be it resolved that the Association extend an expression of its gratitude to the Program Committee, and especially its chairman, Dr. J. J. Gorman, for the excellence of our program which is, in large measure, responsible for the success of this meeting.

Resolution voted approved.

Whereas, the members ,their wives, visitors and guests from other localities have been accorded most generous hospitality by the members of the El Paso County Medical Society, be it resolved that an expression of thanks and appreciation by the Association be officially extended to the El Paso County Society.

Resolution voted approved.

BE IT RESOLVED, that the secretary express to the management of the Hotel Hussmann our appreciation for the many courtesies extended our Association and guests.

BE IT RESOLVED, that the cordial thanks of the Association be extended to the Woman's Auxiliary of the El Paso County Medical Society for their contribution to the entertainment of the doctors and their wives.

BE IT RESOLVED, hat the Association express its appreciation to the daily newspapers for their fair, accurate and full reports of our activities.

These resolutions were heartily and unanimously approved.

WHERAS, movements are now on foot to establish permanent nation-wide health or sickness insurance, in an effort to adjust medical practice and service in such a manner that those who are now unable to pay for such service may receive it.

And, whereas, all such schemes now in operation in other countries have had the effect of lowering the standard of treatment received by the beneficiaries, as well as working hardship on the physicians involved, and thereby hindering the progress or advancement of scientific medicine;

And, whereas, all these schemes represent an adjustment to an economy of poverty, while our problem in America is an adjustment to an actual or potential economy of abundance, the establishment of yet another poverty-born device will simply serve to hinder rather than facilitate our adjustment and can have no logical justification.

BE IT RESOLVED, therefore, that the Medical & Surgical Association of the Southwest, in annual convention assembled, go on record as being in full accord with the stand taken by the American Medical Association in opposing the establishment of national health or sickness insurance. We recommend that the Government pass the problem of medical relief arising out of the present depression to the organized medical profession for solution, together with such legal powers and authority as may be necessary. This will enable us to function in accord with the principles laid down in the resolution adopted by the House of Delegates of the American Medical Association, at the 1934 session, held in Cleveland, Ohio.

These in brief demand preservation of the traditional confidential relationship between the patient and physician; prevention of intrusion by any third party between the patient and the physician of his choice; and guarantee competent service by a legally qualified practitioner."

No discussion over this resolution developed, and upon motion, duly seconded, they were passed unanimously.

Report of the Committee on Nominations was called for, and presented by Dr. R. B. Homan, Sr., chairman.

"The Committee on Nominations, after carefully considering the needs of the Association and the qualifications demanded by the offices, report our recommendations as follows:

For President-Elect, Dr. J. J. Gorman, of El Paso, Texas.

For First Vice-President,—Dr. C. R. Swackhamer, of Superior, Ariz.

For Second Vice-president.—Dr. J. G. Moir, of Deming, N. M.

For Secretary-Treasurer,—Dr. W. Warner Watkins, Phoenix, Ariz.

Motion was made that nominations close and the unanimous vote of the Association be cast for these nominees. This was seconded and carried unanimously. The nominees were declared elected to their respective offices.

Motion was made that the following eminent practitioners be elected to Honorary Membership in the Association:

Dr. J. R. Caulk, St. Louis.

Dr. J. H. Musser, New Orleans

Dr. H. L. Baum, Denver.

Dr. John de J. Pemberton, Rochester, Minn.

Dr. Holman Taylor, Fort Worth, Texas.

Dr. Geo. Piness, Los Angeles, Calif.

Motion was approved and carried unanimously.

Attention was called to the fact that while the revised Constitution stipulates that El Paso shall be regular meeting place of the Association, unless changed for good reasons to some other city, this provision has not yet been adopted, so the place of meeting for 1935 should be decided.

After some discussion, chiefly about the expense of the meeting, attention was called to the provision in the newly adopted By-Laws, authorizing the Executive Committee to work out satisfactory plans for financing the annual meeting.

Motion was then made, seconded and carried, that the 1935 meeting be held in El Paso, time to be set by the joint action of the Program and Executive Committees.

Ajournment sine die.

The entertainment of the visiting ladies was in charge of the Woman's Auxiliary, with Mrs. Ralph Homan, chairman. In addition to their participation in the social gatherings at the barbecue, the Open House at Homan Sanatorium, the Dinner Dance, a special luncheon was served at the Hotel Hussmann on Thursday, and during the day, on Friday and Saturday, "As You Like It" groups were entertained on automobile trips, shopping, golf and in private homes.

The Scientific Exhibits, under the able initiative and management of Dr. L. O. Dutton, were a special feature of this meeting. From the teach-

ing departments of many institutions special exhibits were obtained, and those filled a large part of the mezzanine floor of the hotel. The following is a brief description of the most important exhibits shown:

RADIOGRAPHS OF UNUSUAL CONDITIONS

(Drs. Cathcart, Mason & Dutton. El Paso. Texas)

Radiographs showing: Multiple Myeloma: Non-suppurative Osteomyelitis; Horse-Shoe Kidney; Absence of Epiphyseal growth; Calcification of Thyroid; Heart Conditions and Bone Tumors.

COCCIDIOIDAL GRANULOMA

(Leslie M. Smith, El Paso, Texas)

Photographs of the different clinical types of cutaneous Coccidioidal Granuloma.

Photomicrographs demonstrating the histological differences between the superficial and deep type of involvement.

Photographs and photomicrographs of cultures were also shown.

SECTION EXHIBITS

PRACTICE OF MEDICINE

Therapeutic Effects of Intramuscular Injections of Liver Extract: William P. Murphy, Peter Bent Brigham Hospital, Boston. This exhibit consisted of a group of charts showing the effects of intramuscular injections of a solution of liver extract in the treatment of pernicious anemia.

SURGERY, GENERAL AND ABDOMINAL

Arteriography with Thorium Dioxide Solution (Stabilized) in Peripheral Vascular Diseases: J. Ross Veal and Urvan Maes, Dept. of Surgery, Louisiana State University Medical Center, New Orleans. Exhibit consisted of a number of arteriographs demonstrating various peripheral circulatory diseases, such as angiospasm, gangrene of various types, Buerger's disease, extravascular tumors and varicose veins.

PEDIATRICS

Study in Infant Stools: Frank vander Bogert, Department of Pediatrics, Ellis Hospital, Schenectady, N. Y. A collection of mounted plasticine models of infant stools from actual normal and abormal specimens, showing the effects of various types of feeding and of changes in the constituents of the formulas, was exhibited.

PATHOLOGY AND PHYSIOLOGY

Sickle-Cell Anemia: L. W. Diggs, Department of Clinical Pathology, University of Tennessee. Pathological Institute, Memphis, Tenn. This exhibit consisted of two parts: (1) a series of photographs, photomicrographs, and drawings, show the appearance of patients with sickle-cell anemia, the leg ulcers, the blood picture, the pathological changes and the roentgen observations; (2) printed material giving a word picture of the disease under etiology, incidence, history, physical examination, laboratory observations, pathology, prognosis and treatment.

Ovarian Tumors: Alan B. Moritz, Department of Pathology, Western Reserve University, Cleveland. Exhibit of a series of translucent photographs showing gross and microscopic structures of tumors of the ovary.

Typical Forms of Tuberculous Pulmonary Disease: Herbert S. Reichle, Howard T. Karsner, and Thomas T. Frost, Institute of Pathology, Western Reserve University School of Medicine, Cleveland. Exhibits of transilluminated photographs of coronal sections of the lungs fixed in situ, illustrating pathogenesis of tuberculous infection and demonstrating morphologic bases of the more common types of tuberculous pulmonary disease.

DERMATOLOGY AND SYPHILOLOGY

Observations on Light Sensitive Dermatoses: Nelson Paul Anderson and Samuel Ayres, Jr., Los Angeles, Cal. An exhibit consisting of a series of photographs showing various skin conditions influenced by light sensitivity.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Progress in Public Health Since 1900: Louis I. Dublin, Metropolitan Life Insurance Company, New York. Exhibit of charts showing past and present public health problems; the fight against disease; the gains in chances of survival.

ORTHOPEDIC SURGERY

Injuries to the Vertebrae and Intervertebral Disks Following Lumbar Puncture: Charles N. Pease, Children's Memorial Hospital, Chicago. Exhibit of sketches showing the intervertebral disk and vertebrae, normal and when spine is flexed showing increasing intradisk pressure and herniation into neural canal; roentgenograms of actual cases; accompanying photomicrographs.

GASTRO ENTEROLOGY AND PROCTOLOGY

Stomach Lavage Microscopy as a Diagnostic Aid in Billiary Tract Disease: Henry A. Rafsky from the Max Einhorn Gastro-Entero ogical Clinic, Lenox Hill Hospital, New York. Exhibit of a study of a group of patients with and without biliary tract disease.

AMEBIASIS

Amebiasis: Army Medical Museum, United States Army, Washington, D. C. Exhibit of photographs and photomicrographs showing Endamoeba histolytica compared with other amebae; pictures showing histologic and pathologic phases of amebic dysentery compared with bacillary dysentery.

The Diagnosis of Amebiasis by the Proctosigmoidoscopic Mehod: Manfred Kraemer and Maurice Asher, Newark, N. J. Exhibit of charts and drawings showing method of making proctosigmoidoscopic examination; appearance of mucous membrane, showing area from which smear is made; sigmoidoscopic appearance of bowel in diarrhea that might be confused with amebiasis. Demonstration of warm stage examination of smear on a simple, cheap, rapidly constructed warm stage.

List of Physicians Attending Southwestern Medical Meeting:

Alessi, N. V., Douglas, Arizona
Alexander, M. L., Canutillo, Texas
Awe, Chester, El Paso
Armistead, E. K., El Paso
Armistead, S. D., El Paso
Baum, H. L., Denver, Colorado
Barrett, F. O., El Paso
Bennett, J. T., El Paso
Blanchard, Fred, El Paso
Bloomhardt, S. I., Phoenix. Ariz.
Branch, W. M., El Paso
Britton. J. M., El Paso
Britton, B. H., El Paso
Britton, W. W., El Paso
Brown, C. P., El Paso
Brown, W. L., El Paso
Brown, O. E., Tucumcari, N. M.
Butler, F. W., Safford, Arizona
Brunner, Geo., El Paso
Cathcart, J. W., El Paso
Causey, E. G., El Paso
Cornish, P. G., Albuquerque, N. M.
Craige, Branch, El Paso
Cook, L. C., Albuquerque, N. M.
Cunningham, M. A., Deming, N. M.
Causey, Z., El Paso
Caulk, J. R., St. Louis, Mo.
Cummins, E. J., El Paso
Curtis, W. R., El Paso
Darracott, J. C., Marfa, Teas
Davis, David M., Phoenix, Ariz.
Davis, Neal, Houston, Texas
Davis, W. J., El Paso
Deady, H. B., El Paso
Ebell, W., El Paso
DeLay, W. D., Excelsior Springs, Mo.
Diver, F. C., Springer, Texas
Duncan, E. A., El Paso
Duncan, A. K., Douglas, Ariz.
Dutton, L. O., El Paso
Egbert, O. E., El Paso
Eilera, P. G., Los Angeles, Calif.
Epler, C., Pueblo, Colorado
Flinn, R. S., Phoenix, Arizona
Forster, W. G., Crown Point, N. M.
Goodwin, F. C., El Paso
Gorman, J. J., El Paso
Green, Leighton, El Paso
Geer, R. H., El Paso
Gerber, C. W., Las Cruces, N. M.
Gregory, J. W., Anthony, N. M.
Gwinn, A. Clay, El Paso
Frazin, N. D., Silver City, N. M.
Gaddis, L. R., Alamogordo, N. M.
Gaddy, S. J., El Paso
Gambrell, Hal, El Paso
Garrett, F. D., El Paso
Gekler, W. A., Albuquerque, N. M.
Hollis, R. G., Ft. Stanton, N. M.
Gibbs, M. D., Roy, N. M.
Haffner, S., El Paso
Hannett, J. W., Albuquerque, N. M.
Harper, Fred R., Tucson, Ariz.
Hart, C. S., Dawson, N. M.
Hendricks, C. M., El Paso
Herrod, C. R., Silver City, N. M.
Holt, Russell, El Paso
Holt, W. A., Globe, Ariz.
Homan, R. H., El Paso
Homan, R. B., Jr., El Paso
Homan, R. B., Sr., El Paso
Hughes, R. P., Anthony, N. M.
Hunt, C. H., Bisbee, Ariz.
Ingalls, H. A., Roswell, N. M.
Jamieson, W. R., El Paso
Jenness, B. F., El Paso
Johnson, B. A., San Loreta, N. M.
Jumper, C. E., El Paso
Keller, N. H., El Paso
Kennedy, Fred San Carlos, Ariz.
Kennedy, R. D., Globe, Ariz.
Laws, J. W., El Paso
Leigh, Harry, El Paso
Liddell, T. C., El Paso
Long, A. D., El Paso
Lougharn, C. H., Prescott, Ariz.
Miller, F. P., El Paso
Morris, J. W., Safford, Ariz.
Multhauf, A. W., El Paso
Morrison, J. E., El Paso
Murray, Mildred, El Paso
Murphy, J. L., El Paso
Mendelson, R. W. Albuquerque
Meason, James, Chandler, Ariz.
Moir, J. G., Deming, N. M.
Moore, J. R., Phoenix, Ariz.
Mason, C. H., El Paso
Milam, Y. M., Fabens, Texas
Miller, C. A., Las Cruces, N. M.
Newman, S. H., El Paso
Palmer, R. F., Phoenix, Ariz.
Pemberton, John de J., Rochester, Minn.
Pickett, J. A., El Paso
Porter, R. E., Ft. Stanton, N. M.
Prentiss, E. C., El Paso
Piness, Geo., Los Angeles, Calif.
Rogers, Earl, El Paso
Rogers, Will, El Paso
Rice, H. W., Morenci, Ariz.
Randel, Brown, El Paso
Rawlings, J. Mott, El Paso
Rawlings, J. A., El Paso
Rennick, Chas., El Paso
Rheinheimer, E. W., El Paso
Rogde, J., El Paso
Safford, H. Jr., El Paso
Safford, H. T., El Paso
Smith, Willard, Phoenix, Ariz.
Spearman. Maurice, El Paso
Steel, J. A., Hatch, N. M.
Speck, J. A., Denver, Colorado
Spier, Eric, El Paso
Schuster, Frank, El Paso
Schuster, Stephen, El Paso
Shannon, H. M., El Paso
Smith, Leslie, El Paso
Smith, Dudley, San Francisco,
Sherman, J. E., El Paso
Stevens. B. F., El Paso
Stevenson, Walter, El Paso
Stratton, J. N. Safford, Ariz.
Stevenson, H. E., El Paso
Stowe, Jesson, El Paso
Swope, S. D., El Paso
Strong, E. D., El Paso
Swackhamer, C. R., Superior, Ariz.
Swearingen, D. D., Roswell, N. M.
Simms, E. P., Alamogordo, N. M.
Taylor, Holman, Ft. Worth, Texas
Terrell, Scurry, El Paso
Thompson, Ernest, El Paso
Thompson, R. H., El Paso
Tucker, G. E., Anthony, N. M.
Tappan, J. W., El Paso
Turner, Geo., El Paso
Utzinger, O. E., Ray, Arizona
Von Almen, S. G., El Paso
Vickers, F. D., Deming, N. M.
Vandevere, W. E., El Paso
Vance, James, El Paso
Van Atta, J. R., Albuquerque,
Varner, Harry, El Paso
Werley, G., El Paso
Waggoner, T., El Paso
Wood, J. P., Tucson, Ariz.
Woolston, W. H., Albuquerque,
Wilson, R. A., Tucson, Ariz.
Watkins. W. W., Phoenix, Ariz.
Walker, J. G., Roswell, N. M.
White, W., El Paso
Waite, W. W., El Paso
Watts, R. E., Silver City, N. M.
White, A. C., Hot Springs, N. M.
Wilson, J. C., Wilcox, Ariz.
Womack, C. L., Artesia, N. M.
Worthington, W. N., Roswell,
Lynch, K. D., El Paso
Molloy, M. S., Ysleta, Texas
Musser, J. H., New Orleans, La.
McChesney, P. E., El Paso
McCamant, T. J., El Paso

Bachman, Capt. J. P., Wm. Beaumont Hospital, El Paso
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Dooling, Major H. C., Wm. Beaumont Hospital, El Paso
Emerson, Major H. V., Wm. Beaumont Hospital, El Paso
Franklin, Major Daniel, Wm. Beaumont Hospital, El Paso
Green, Capt. Mack M., Wm. Beaumont Hospital, El Paso
Hurley, Major T. D., Wm. Beaumont Hospital, El Paso
Kirkpatrick, Capt. C. L., Wm. Beaumont Hospital, El Paso
Kraus, Capt. Wm., Wm. Beaumont Hospital, El Paso
Pipes, Col. H. F., Wm. Beaumont Hospital, El Paso
Raycroft, H. V., Wm. Beaumont Hospital, El Paso
Strickler, Major E. J., Wm. Beaumont Hospital, El Paso
Williams, Major J. N., Wm. Beaumont Hospital, El Paso
Walker, Capt. Dean M., Ft. Bliss, Texas

Allande, Alberto, Juarez, Chih., Mexico
Arguelles, Fernando, L., Juarez, Chih., Mexico
Asomoza, Juan, Juarez, Chih., Mexico
Barrios, Ignacio, Juarez, Chih., Mexico
Davalos, Antonio, Juarez, Chih., Mexico.
Diaz, J. M., Juarez, Chih., Mexico
Espinosa, Francisco,, Juarez, Chih., Mexico
Hassegawa, T., Juarez, Chih., Mexico
Jumper, C. E., Juarez, Chih.. Mexico
Liano, Parra Franusco, Juarez, Chih., Mexico
Lozano, Porfirio, Juarez, Chih., Mexico
Mendoza, Hermillo, Juarez, Chih., Mexico
Molinar, Y Rey Jose. Juarez, Chih., Mexico
Molinar, Y Ramon, Juarez. Chih., Mexico
Palafoz. Jose M.. Juarez, Chih., Mexico
Pereyra, Rodolfo Z., Juarez, Chih., Mexico
Reyes, Quiroz Daniel, Juarez, Chih., Mexico
Rodarte, Damitido, Juarez, Chih., Mexico
Rodarte, Ruben, Juarez, Chih.. Mexico
Vargas G. Francisco, Juarez, Chih., Mexico

STATE OF ARIZONA VS. LUKAN-TROTZKY.

In the border city of Nogales, the Santa Cruz County Medical Society has won its first round in a legal battle to stop the unlicensed practice of a man who has been active in Arizona and elsewhere for several years and under various names, as Romano Makorski Lukangok, Lukan, Anthony, McCormick, Trosky or Trotzky. The identification of this individual as the "Dr. R. A. Lukan" who visited Phoenix eight years ago, enables us to appreciate the difficulty under which the medical fraternity in Nogales are laboring. In the minutes of the Staff Meeting of St. Joseph's Hospital in Phoenix, for Nov. 8, 1926, appears this entry:

"The Chairman stated that the hospital had the opportunity to secure the services as paid intern of a young doctor of foreign birth who is fully qualified by training to give good service as an intern. By motion, the staff voted to approve this arrangement by the hospital. The applicant for this position is Dr. R. A. Lukan."

Under these auspicious circumstances "Dr. Lukan-Trotzky" made his advent into Arizona. The Department of Justice in Washington has record of his arrest under the name of Ray Anthony, in Minneapolis in June, 1923, charged with forgery, though without information as to the disposition of the charge. He apparently stayed in that city, as the American Medical Association's records show him practising there in 1925 under the name of Romano Douglas Anthony; later he practised in Chicago before coming to Phoenix. He worked in St. Joseph's Hospital for six months as an "intern". During this time he established credit at various business houses in Phoenix and left suddenly one day in an unpaid-for Cadillac car. It is with a somewhat chastened spirit that we present his record during the

next seven years, realizing that if he could hoodwink the veteran chairman of St. Joseph's Hospital, wise in his knowledge of humanity, and so completely fool a staff of fifty or more doctors, the casual citizen has little chance of correctly guaging his character.

Lukan wasted no time coming to the surface, this time in Oklahoma, the record there being best told by quoting from the Journal A. M. A., of July 30, 1927, under "Oklahoma News":

"Warning—'Dr. Robert Trosky.' A physician from Tulsa writes that 'Dr. Robert Trosky' applied to him recently for a position as an assistant. He claimed to be a graduate of the University of Petrograd, and to have done hospital work in Minneapolis and Albany. He mysteriously disappeared a few days ago, leaving bad checks in the hands of business men."

He evidently found the pickings in Oklahoma too good to leave for he simply moved to Ponca City and worked under another alias. In the Journal A. M. A., for Dec. 17, 1927, appears the following under "Oklahoma News":

"Romano Makorski Lukangok, alias Lukan, McCormick and Anthony. Any one meeting a young Russian by any of these names will do a favor by having him held and wiring the police at Ponca City, Okla. 'Dr. Anthony' arrived recently, announcing that he was locating in Ponca City to do eye, ear, nose and throat work. He claimed to be a graduate of a Russian medical school and to have been at the Manhattan Eye and Ear Hospital, New York, for several months. He wanted to work either in the hospital at Ponca City or for some physician until he could take the state board examination. After about three weeks he suddenly left town in a borrowed Cadillac touring car. He left unpaid bills and worthless checks. Lukangok, alias Anthony, and so forth, is a well dressed, pleasing fellow, has curly black hair, wears a small mustache and weighs about 170 pounds. Information on file in these headquarters indicates that one Romano Douglas Anthony practised medicine in Minneapolis in 1925, and that he went from there to Chicago, where he also practised a year or so. In Minneapolis he is said to have treated surgical cases and venereal diseases, and to have been in the business of selling liquor and narcotics."

As "Dr. Bob Lukan" he was arrested at Austin, Texas, in February, 1928, on charge of violating the National Motor Vehicle Theft Act. Disposition of this charge is not known, but he was sentenced from Austin in June, 1928, under the name of "Romano Trosky" for violation of the Dyer Act, being sent to Leavenworth for a year and a day.

The Department of Justice has record of his arrest in San Angelo, Texas, in July, 1929, under the name of "Romano N. Trotzky" and in September, 1929, he was arrested in El Paso, under the same name on charge of swindling; he was transferred to the U. S. authorities for deportation. We are unofficially informed that the failure to deport was due to the fact that the United States had not then recognized the Soviet government. He was sentenced from Hennepin County, Minn., (December, 1929) under name of "Romano Trotzky" to serve an indeterminate sentence in Stillwater Prison, on charge of criminal abortion.

According to information from the Warden of Stillwater Prison, given to the Santa Cruz County Medical Society, he was discharged on March 27, 1931, and taken into the custody of the United States Immigration Service for deportation. The Immigration Service must have taken him direct to El Paso, because the Department of Justice records state that he was arrested in that city on March 29, 1931, by the Immigration Service, and given a sentence of fifteen months; further that he was released on his own recognizance, pending orders for deportation to Russia or country of subject's own choice, with orders to report to the Inspector in Charge at El Paso, daily.

Somehow, he escaped this net because he appeared in Winslow, Ariz., in July, 1931, claiming to be a graduate of several medical schools, to have a license to practise in Arizona and to specialize in eye, ear, nose and throat work. The Navajo-Apache County Medical Society investigated these claims, found that he had no license to practise in Arizona and filed criminal charges against him. A jury convicted him. A second complaint was filed and while out on bond awaiting the hearing of this, he removed a patient from Winslow to Flagstaff and operated upon her for removal of fibroid tumor. The patient died and Trotzky was tried in August, 1932, by jury in

(Continued on page 430)

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MEDICAL EDUCATION OF THE LAITY

(Editorial by Orville H. Brown)

Two years ago the chiropractors had an initiative petition upon the ballot which was defeated, but by a majority which did not reflect credit upon the understanding of the public regarding medical questions. This year the naturopaths had an initiative measure upon the ballot which was defeated, but again by a shamefully small majority. Had either measure passed, it would have allowed the uncultured and untrained individual desiring to make a "racket of the practice of medicine," to attempt anything which duly trained and licensed doctors of medicine only are now permitted to do.

We believe that many medical men are thoroughly convinced that, had there been no active campaign against these measures, one or both of them would have passed.

It is certain that these cultists will become active again at the next election and perhaps at every election until they have attained their objective or until they have been so overwhelmingly defeated that they will give the task up as hopeless.

One intelligent individual known to us voted yes on No. 303 in the last election because she thought she was forcing the naturopaths to become better educated by giving them the board for which they asked. This patient was not contacted by her physician during the time of the short campaign against number 303 and this accounts perhaps for her not voting correctly.

Should we not now begin an active campaign of education of the laity upon the question at issue? It seems that we might well do so.

We would recommend that the Arizona State Medical Association prepare a leaflet entitled, "Facts on Medical Practice"; that this be distributed to the physicians of the State to be sent in bills, letters, and in other ways to patients and friends.

We would have this folder say that, in order for the voters to understand the problem of the late measure 303 and similar measures which will likely have to be voted upon again at future elections, it is necessary to know something of medical history such as the following:

Medical cultists have existed from time immemorial and have always made "a racket" of the healing art. In the earliest times the priests and other learned men were the earnest, conscientious, educated practitioners of this art. General science slowly developed facts applicable to medicine. Medical schools in the course of the centuries were organized as formal purveyors of the knowledge applicable to medicine. The courses in medicine, however, were irregular and short, of one or two years, and it was not until late in the last century that the courses were lengthened.

During the seventy-five years just passed, medical knowledge has accumulated at a tremendous rate. The amount of research work has been enormous. Ether was given for an operation by Crawford W. Long in 1842. Pasteur discovered the connection of germs with the cause of disease about 1856. About 1865 Lister applied Pasteur's revelation to surgery

and led to safe operations. Koch discovered the tubercle bacilli in 1880, and laid the foundation for a most gratifying decrease in the tuberculosis death rate. Diphtheria antitoxin was developed about 1890. The germ of syphilis was discovered about 1905. The causes of many diseases such as cancer, mumps, chicken pox, small pox, and so forth, have not yet been discovered but may be found almost any day. The amount of information being disseminated every week in medicine to the physicians is appalling to one who attempts to keep up with it. Because of the great accumulation of facts on medicine, the medical schools have been forced to lengthen their courses and to require extensive preliminary preparation for the students.

At present a young man must have completed grade school, high school, and two to four years of college before he is allowed to enter a medical school, where he must spend four years of extremely hard work; before he is allowed to practise, he must devote a year or two to hospital work, and then he must take a State Board or the National Board examination, and also in this State the "Basic Science" examination.

There are numerous young persons in the country who wish to become doctors of medicine, but who are unable to gain admission to medical schools, or who are unwilling to go through the long grind; for this reason it has become a "racket" to put men through a superficial training with less rigid requirements than that of the regular medical courses, and to influence legislation to set them up as practitioners of the healing art, under some other name than doctors of medicine. All cultist schools teach a smattering of medical knowledge.

It matters not what the cultists call themselves, they are really inferior practitioners of medicine; whatever they claim as their special system of practice is but dust in the eyes of the public for the purpose of camouflaging their real ambition. This does not mean that there is or is not virtue in the claims for their special systems, but that these can apply directly to every type of disease is ridiculous.

The medical profession holds that every practitioner of the healing art, irrespective of what he calls himself, is really a practitioner of medicine and should take the examination provided by those practitioners with the highest standard, which, of course, is regular medicine. Since, however, all cults cry out loud and long for their own theories and systems of healing and deny that their graduates are practitioners of medicine, it is obviously impossible to compel them to take the examinations required of the doctors of medicine. For this reason, our "Basic Science" Law requires any and every person wishing to practise the healing art in Arizona to take examinations in anatomy, physiology, chemistry, bacteriology, hygiene, and pathology before taking examination of the medical board or any other board.

We would then have the pamphlets conclude with the statement that doubtless the cultists will have other measures on the ballots in the future just as iniquitous, dangerous, and as cleverly worded as those that were upon the ballots at the last two elections; please beware! Ask your physician about any question which puzzles you along this line.

THE EL PASO COUNTY MEDICAL SOCIETY

September 10, 1934

(Reported by Dr. Leslie M. Smith, Secretary)

Program: Symposium on Treatment of Syphilis. Discussions opened by: A. W. Multhauf, M. D., Leslie M. Smith, M. D., and Chester Awe, M. D.

X-ray in Diagnosis of Tuberculosis: R. B. Homan, M. D.

The El Paso County Medical Society met September 10, 1934, at 8 p. m., at Hotel Hussmann; Dr. Ralph Homan presided.

Dr. A. W. Multhauf discussed the treatment of primary syphilis and stressed the importance of long-continued treatment without rest periods. He stated that every genital sore should be considered chancre until proved otherwise. The principal diagnostic aid is the dark-field microscope.

Dr. Leslie Smith discussed the treatment of secondary and uncomplicated tertiary cases. He emphasized the need of strenuous and long-continued treatment in secondary cases and less intensive treatment in tertiary cases to be continued over a longer period. He discussed the various drugs used in the treatment of syphilis. Slides were shown illustrating the various types of cutaneous lesions.

Dr. Chester Awe discussed lesions of the central nervous system and viscera. Syphilis is the second most common reported disease. Invasion of the viscera and nervous system occurs early. There

are 240,000 cardiovascular syphilitics in the United States at any given time and 20,000 deaths each year from this cause. It is best to use bismuth for some time before starting arsenicals. In hepatic syphilis, the best treatment consists of mercury and small doses of potassium iodide. Malaria is the superior treatment in paresis.

Dr. W. R. Jamieson told of the treatment of syphilis in pre-arsphenamine days. Dr. E. D. Strong spoke of syphilitic rectal strictures and stated that the Oudin current is of value in these cases. Dr. Paul Gallagher stated that it is quite difficult to differentiate dactylitis due to syphilis from that due to tuberculosis. Dr. Mott Rawlings reported a case of pulmonary syphilis. Dr. L. C. Dutton emphasized the fact that too often syphilis is under treated. This is due sometimes to the physician's negligence and sometimes to lack of co-operation on the part of the patient.

Major Raycroft emphasized the danger of liver damage in the treatment of syphilis. The liver bears the brunt of the damage and this should be constantly borne in mind. He stated that he did not think that every physician was qualified to treat syphilis.

Dr. R. B. Homan discussed the value and the limitations of the x-ray in the diagnosis of pulmonary tuberculosis. He stated that stereo-roentgenograms are a great aid in getting a clear idea of lung pathology, particularly regarding the size and depth of cavities and the conformity of neoplasms; however, it is but an aid to the physical examination and history. Only a physician has the knowledge necessary to proper interpretation of x-ray films. Dr. Homan showed a number of films illustrating the place of x-ray in chest diagnosis. Dr. J. W. Laws stated that many cases of tuberculosis are found by x-ray which could not be recognized otherwise. In other cases the x-ray findings point toward tuberculosis when physical examination proves them otherwise. Sputum examination is too often neglected. Dr. O. E. Egbert stressed the value of the x-ray in diagnosis of early infiltrative lesions. The diagnosis may be made before the physical examination gives any clue. Dr. Frank Schuster stated that tuberculosis of the larynx could often be diagnosed with x-ray by means of a special technic.

Dr. W. M. Branch suggested that the time of meeting be changed to 7:30. Dr. Ralph Homan stated that the time is automatically changed to 7:30 during November, December, January, and February.

A letter was read from Dr. W. W. Watkins relative to reorganization of the Medical and Surgical Association of the Southwest. Dr. W. R. Jamieson said he thought it would be best to wipe out all delinquent dues and begin anew. On motion of Dr. F. P. Miller the society voted to recommend that delinquent dues be wiped out.

Dr. J. J. Gorman told of the plans for the coming meeting of the Medical and Surgical Association of the Southwest.

Dr. R. B. Homan moved that all who are eligible to membership in the Medical and Surgical Association of the Southwest be charged a registration fee of $3.00, excepting those who have made donations toward the expenses of the meeting; and that the society advance money for stationery and postage for the program committee. This motion was seconded and passed.

Adjournment, at 9:55 p. m.

THE MEDICAL AND SURGICAL ASSOCIATION OF THE SOUTHWEST PROPOSED REVISED CONSTITUTION AND BY-LAWS ADOPTED AT EL PASO MEETING, NOV. 24, 1934.

(Revised Constitution to Be Voted on at the 1935 Meeting).

Article I. Name.

The name of this Association shall be Southwestern Medical Association.

Article II. Objects.

The objects of this Association shall be the advancement of the science and art of medicine, the promotion of better methods of treatment, the encouragement of professional and social relations among the members of the profession in the Southwest, by annual clinical conferences, scientific exhibits, clinics, publications, and other means.

Article III. Members.

Sec. 1. The members of the Association shall be Active, Associate and Honorary.

Sec. 2. Active members shall be regularly licensed and reputable practitioners of medicine residing or practicing in the state of Arizona or New Mexico, western Texas or the Republic of Mexico, who shall make application on the forms prescribed, shall be approved by the Board of Censors, and elected by a two-thirds majority vote of the active members present at a regular annual meeting. Medical officers of the United States Public Health Service, the United States Army and Navy, the Veterans' Administration, or the United States Indian Service, stationed in the district mentioned, are eligible for active membership.

Sec. 3. Associate members shall be legally qualified and reputable practitioners of medicine residing or practicing elsewhere than in the district mentioned in Section 2. They shall make application and be approved in the same manner as active members, shall pay the annual dues and receive the official publication of the Association, but are not entitled to vote or to hold office in the organization.

Sec. 4. Honorary members shall be physicians and surgeons who have achieved distinction in medicine or surgery. They shall be elected by unanimous vote of the active members at any annual meeting; they shall not pay dues and shall receive the official publication of the Association without charge.

Article IV. Officers.

Sec. 1. The officers of the Association shall be a president, president-elect, first and second vice presidents, secretary-treasurer and three censors.

Sec. 2. All officers except censors shall be elected at the annual meeting and shall take office at the close of the meeting at which they are elected.

Sec. 3. The president-elect shall serve in that office dhring the year following his election and shall asshme the office of president at the an-

nual meeting following his election. He shall take over the duties of president at the opening of the last general session of the annual meeting.

Sec. 4. The three censors shall constitute the Board of Censors, the eldest in time of service on the Board being its chairman.

Article V. Meetings.

Sec. 1. The regular annual meeting shall be held between November 1 and February 28, the definite dates to be decided by the Program Committee with the approval of the Executive Committee. The place of the annual meeting shall be El Paso, Texas. However, the Association will at any regular meeting, and on the recommendation of the Executive Committee, consider an invitation to meet in any city within the jurisdiction of the Association.

Sec. 2. At the annual meeting, no practitioner residing in the district embraced by this Association shall be placed on the scientific program unless he or she is an active member in good standing of the organization. This does not apply to the participation by members of the entertaining society in clinics, scientific exhibits or discussions.

Sec. 3. Should extracrdinary emergency arise, special meeting of the Association may be called by the Executive Committee. Notice of such meeting, stating is purpose and the need thereof, shall be sent to all active members at least two weeks before the scheduled date of the meeting.

Article VI. Amendments.

Amendments to this Constitution must be presented in writing at one annual meeting and be laid over to the next annual meeting, when after specific notice of the proposed changes has been given to all active members at least two weeks before the meeting, a two-thirds vote of all active members present shall be necessary for adoption of such amendments.

BY-LAWS

(As Adopted at Business Meeting, Nov. 24, 1934)

Sec. 1. The President shall preside at all meetings, shall be chairman of the Executive Committee and ex-officio member of all standing committees, and shall perform all of the duties usually incident to that office.

Sec. 2. The president-elect shall serve as a member of the Executive Committee and chairman of the Membership Committee. He shall assume the office and duties of president at the opening of the general business session of the meeting following his election.

Sec. 3. The two vice presidents shall serve as members of the Executive Committee and shall represent the Association on the Board of Managers of Southwestern Medicine. In the event of illness, death or absence of the president, the first vice president shall serve in his tead. In first vice president shall serve in his stead. In the event of the inability of the first president, the second vice president shall serve.

Sec. 4. The secretary-treasurer shall keep a correct record of all proceedings of the Association and of the Executive Committee; keep a correct list of all members; have charge of all books, papers and other documents of the Association and shall conduct all correspondence, including notice to members. He shall collect all dues, keeping a correct account of same, and shall render at the annual meeting a detailed report of all receipts and expenditures. At the expiration of his office he shall hand over to the Executive Committee or to his successor all money and property in his possession belonging to the AAssociation. He will be a member of the Executive, Membership and Publication committees.

Sec. 5. The Board of Censors shall be composed of the three most recent ex-presidents of the Association, the oldest in time of service being chairman. This Board shall receive from the Membership Committee all applications for active and associate membership, and shall investigate the qualifications and fitness of such applicants for membership in the Association by inquiry concerning their reputation and standing in their respective communities. They shall report their recommendations regarding such applicants to the first business session of the Association at the annual meeting.

This Board shall also investigate any charges of unprofessional conduct brought against any members and if, in their unanimous opinion, the charges are deemed well founded, may suspend such member from all privileges of the Association, until the next regular or special meeting of the Association, at which time they shall make report of their action. If their action shall be sustained by a two-thirds vote of the members present at such meeting, a penalty shall be inflicted, the severity of which shall be determined by vote of the Association.

Article II. Duties of Committees

Sec. 1. The Executive Committee shall consist of the elected officers and the chairman of the Board of Censors. This Committee shall be the Board of Trustees of the Association, and shall perform all the duties usually performed by such a Board. They shall have authority to act for the Association between annual meetings. In cooperation with the Program Committee they shall make all the arrangements for the annual meeting. They shall serve as the finance committee with authority to expend the funds of the Association. They shall determine the dates of the annual meeting and arrange with the entertaining society for financing the expenses of such meeting. They shal. have authority to invite voluntary contributions from the members of the AAssociation for any extraordinary expense which seems necessary for the advancement of the Association. They shall not have authority to levy compulsory assessments on the members, but may set the amount of a registration fee for the annual conference.

The Executive Committee shall appoint all committees not otherwise provded for in this constitution, including committees on nominations, membership, program, resolutions and necrology, as well as any special committees which may become necessary for the efficient work of the Association.

Sec. 2. The Membership Committee shall be composed of the president-elect, who shall be its chairman, the secretary-treasurer and three members appointed by the Executive Committee. Their function shall be eo enlist the cooperation of all reputable practitioners of medicine in the southwest in the Association; they shall keep the profession informed about the plans and program of the Association and seek to enlarge the influence of the organization. They shal. take applications for membership on regular forms and submit these to the Board of Censors in advance of the annual meeting, so that the Board may have opportunity to investigate the qualifications of such applicants before making their report to the Associaion.

Sec. 3. A Committee on Program shall be appointed by the Executive Committee. This Program Committee shal.l be charged with the full responsibility of the annual meeting and clin-

ical conference. In conjunction with the entertaining society they shall determine the type of program to be given, the scientific exhibits, the social entertainments, together with the participation of members of the entertaining society in the scientific program and clinical conferences, and any other matters connected with the annual meeting. They shall conduct correspondence with prospective speakers and arrange for their participation in the program. They may appoint committees for the different phases of the annual program, and with approval of the Executive Committee, set a registration fee for the annual meeting,, and the appropriation to be made by the Association toward the expenses of such meeting.

The Program Committee will set the time to be allowed the different speakers on the program and notify them, the general rule being that papers will be limited to twenty minutes in presentation and discussions to five minutes in invied guests or papers of special interest, additional time may be allowed which will be indicated on the printed program.

Sec. 4. The Publication Committee shall be composed of the secretary and the two vice presidents. They shall have charge of publishing the proceedings of the Association, the papers, addresses and clinical discussions. With the approval of the Executive Committee, they shall arrange the amount to be paid Southwestern Medicine for serving as the official organ of the Association. They shall have charge of printing any documents, pamphlets or circulars necessary for the conduct of the Association's affairs, including programs and other publications required by the annual or special meetings.

Sec. 5. At the opening session of the annual meeting, or at some prior time, the Executive Committee shall announce a Committee on Nominations, composed of three active members in good standing., This committee shall study the needs of the Association and the qualifications of the members and shall report one or more nominations for each of the offices to be filed at the annual election. This report will be made at the business meeting of the second day of the annual session and opportunity will then be given for nominations from the floor, following which the election will proceed in regular manner.

Sec. 6. A Committee on Necrology shall be appointed at or prior to the opening of the annual meeting. This Committee will bring in appropriate resolutions regarding any deceased members of the Association.

Sec. 7. At or before the opening session of the annual meeting a Committee on Resolutions shall be appointed. To this committee will be referred any resolutions or recommedations regarding matters on which the voice of the Association is desired. The Committee is also charged with the duty of bringing resolutions upon any matters regarding which they themselves think the Association should give expression. They shall make their report at the final business meeting of the Association.

Article III. Election of Members.

Sec. 1. Applications from proposed active or associate members may be received by the secretary or any member of the membership committee. Former members of the Association may be considered for membership provided they are not indebted in any way to the Association. Such applications shall be on regular forms and contain such information as may be required by this committee. Such applications shall be transmitted to the Board of Censors, who shall investigate and report their recommendations to the first business meeting of the Association at the annual meeting. A two-hirds majority vote shall be required to elect such applicants to membership. Such elections shall be for the ensuing calendar year, and shall be continuous unless the member is dropped for non-payment of dues or by vote of the Association for unprofessional conduct.

Sec. 2. Honorary members may be nominated at any annual meeting and shall require unanimous vote of those present to elect.

Articles IV. Dues

Sec. 1. The dues of the Association shall be $3.00 per year, for active and associate members. Any member who does not already receive the official publication (Southwestern Medicine) by virtue of membership in some other organization shall be entitled to this journal through his membership in this Association.

Sec. 2. Any member whose dues remain unpaid at the time of the annual meeting shall be considered as not in good standing, and if the delinquency is not met by the close of the calendar year, shall be dropped from the membership roll, and so notified by the secretary.

Article V. Miscellaneous.

Sec. 1. All papers read before the Association shall become its property, to be published at the discretion of the Publication Committee, in its official journal.

Sec. 2. Twelve active members in good standing shall constitute a quorum for the transaction of business at any regular or special meeting of the Association.

Sec. 3. Robert's Rules of Order shall govern all proceedings, unless otherwise provided for.

Article VI. Amendments.

These By-Laws may be amended or suspended at any business meeting by resolution and a two-thirds vote of those present, provided said amendments or suspensions are not in violation of the Constituion.

STATE OF ARIZONA VS. LUKAN-TROTZKY.

(Continued from page 425)

Coconino County for murder. The jury did not convict him and he again disappeared.

He next appeared in Twin Falls, Idaho, where he began to practise the specialty of eye, ear, nose and throat, without a license. His career there was short, the story being best told by quoting from the Twin Falls Daily News of August 22, 1933:

"A menace to society was the characterization which Judge W. A. Babcock in the district court here yesterday applied to Robert N. Trotzky, 38, who last week pleaded guilty to practice of medicine and surgery in Twin Falls the past six weeks without an Idaho license.

Sentencing Trotzky to serve a four month term in the Twin Falls county jail and to pay $100 fine, Judge Babcock said: "I am sorry it is impossible under the law dealing with this offense to remove the defendant farther from society, because of his past record as a menace to society. Reports from the United States Department of Justice show that he has been convicted and served time at least twice for other and more serious crimes."

His next emergence from obscurity was in the border city of Nogales, and there he ran

foul of the Santa Cruz County Medical Society, who are trying to make it impossible for him to continue his career in the Southwest. This journal is trying to aid them by this publicity, and the accompanying photograph taken at the time of his conviction in Austin, Texas. Apparently Lukan or Trotzky does not bother to disguise himself, depending on his personality and brazen effrontery to carry him through difficult situations.

We commend the enterprising Santa Cruz County Medical Society for their success thus far in prosecuting this impostor. Other communities are warned that he may suddenly appear in their midst any time.

INDUSTRIAL RELATIONS COMMITTEE OF THE ARIZONA STATE MEDICAL ASSOCIATION

This Committee, which was formed in response to resolutions adopted at the 1934 annual meeting of the Arizona State Medical Association, is composed of the following:

Dr. Meade Clyne, President of the Association, Chairman.

Dr. A. C. Carlson, Jerome, Ariz.

Dr. Robt. Ferguson, Bisbee, Ariz.

Dr. R. D. Kennedy, Globe, Ariz.

Dr. E. Payne Palmer, Phoenix, Ariz.

Dr. D. F. Harbridge, Secretary, Arizona State Medical Association, (ex-officio), Phoenix, Ariz.

Dr. W. Warner Watkins, Phoenix, Ariz. (Secretary of the Committee).

The Committee has been holding monthly meetings in Phoenix since their organization meeting on July 1, 1934, minutes of which have been published in the Bulletin of the Industrial Commission, Vol. 1, No. 1, August, 1934. A summarized record of their proceedings since that meeting follows:

Meeting July 29, 1934

Item 1. Question of proper charge for services rendered in case of skull fracture, treatment covering five days, at the end of which period death occurred. A recommendation that a charge of $100 would be equitable.

2. The matter of filing x-ray films of industrial patients was considered at some length. Dr. C. R. Swackhamer, of Superior, outlined the viewpoint of the industrial surgeon. The medical referee of the Commission called attention to their position which is influenced by the fact that no industrial case ever reaches finality, many of them being re-opened or have rehearings months or even years after being supposedly finally disposed of. In evaluating such injuries, the original films are very necessary, and only by maintaining all the information in their own files can the Commission handle such cases properly. By motion, the Committee stated that they would approve a ruling of the Commission that the first and final films on each case be sent to the Commission for its permanent files, except in the case of the self raters where permanent files are maintained. It is understood that the films filed with the Industrial Commission shall, at all times, be available to the surgeon attending the case, to be returned to the Commission files when the purpose for which they were borrowed has been served. The films of the self raters likewise to be available to the Commission under the same conditions.

3. A number of cases were discussed, with regard to their medical or surgical problems, and referred to the Medical Rating Board for final disposition.

Meeting of September 2, 1934

4. Considerable time was given over to a discussion of the publication of the details of cases reviewed by the Committee and by the Medical Rating Board. It was decided to omit the names of workmen and doctors, and to discuss all cases impartially as medical problems.

5. A case of suspected lead poisoning was considered at great length and finally referred to the Medical Rating Board with request for further data (See items 13 and 23.)

6. Question of the proper charge by a doctor who gave first aid to a workman with compound fractures of both fore-arms, and then accompanied him 90 miles in automobile, to see that he was safely placed in a hospital. The decision of the Committee was that the remuneration should be the first aid charge plus regular mileage, or a total charge of $100.00.

7. Question of the proper charge for surgical removal of an olecranon bursa for bursitis following injury. Committee agreed that a fair fee for this would be $50.00.

8. Case of a workman for a packing company who had an infected wound on a finger; he later received a contusion of the shoulder and chest, fol-

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Medical Director

lowing which he developed pneumonia. Concomitant with the pneumonic element he developed convulsions which were suspected of being tetanus from the infected finger, and for which antitetanic serum was given. Patient recovered. Opinion of the Committee from the record was that the symptoms were all due to an ascending infection from the finger, involving lungs and possibly meninges.

9. Cases of three workmen claiming injuries from inhaling fumes after blasting in an underground mine. One of these men was later shown to have a fibro-cavernous tuberculosis. These cases were all referred to the Medical Rating Board for personal study and final decision.

10. Case of a middle aged cowboy whose abdomen was bruised against pommel of saddle by bucking horse. Several weeks later he was operated upon for perforated stomach ulcer. Claim was made that the ulcer was traumatic. Committee gave as its opinion that the presence or the development of the ulcer could not rightly be ascribed to the bruising injury.

11. Question of equitable charge for services in a case of an injury received in a bus accident, in which there was a compound fracture of the ilium. This was followed by infection and prolonged treatment extending over several weeks. By motion it was decided that a charge of $250.00 would be equitable for the operative procedure and the post-operative care of this patient.

12. Question of the proper charge for removal of a tendon cyst on the back of the hand, when this is due to industrial injury. Committee was of the opinion that this is in the class of the olecranon bursa mentioned in paragraph 7, and that $50.00 would be a fair charge.

Meeting of September 30, 1934

13. The case of suspected lead poisoning was again considered at great length, with all the available data, and the Committee was of the opinion that this appeared to be a case of chronic lead poisoning with an acute exacerbation precipitated by ingestion or inhalation of lead acetate at the time the workman was making up this solution. Further information regarding this case was sought from an experienced investigator in industrial injuries and final report of the Committee is set forth in Item 23 below. (See item 23.)

14. Question of the cause of disability resulting shortly after a strain sustained by the effort to hold up his own end of a bundle of pipes when his companion dropped the other end. Abdominal pain and shock developed, and patient was taken to hospital in Gallup, N. M. Opinion of the surgeon in Gallup was that this was a case of renal colic and similar to a previous attack occurring before the accident. The Committee reviewed the record and gave as their opinion that this man's illness was not caused by the accident described.

15. Case of supposed "Brass Founder's Ague." Workman collapsed in a tank where he was doing brass welding; he had cough, chest pain, fever and headache but no chill. Later he was found to have hypertension and nephritis. Eyeground examination suggested toxic changes. Case was referred to the Medical Rating Board for personal examination and further study.

16. Workman received a blow over the sacrum and after several weeks a tumor was discovered; x-ray interpretation of this was a malignant growth in the sacrum. Patient died and his widow presented claim for compensation. Body was exhumed and pathological examination showed sarcoma of myeloma type. Opinion of the Committee was to the effect that the injury sustained had nothing to do with this man's alleged early symptoms, his illness or his death.

17. Case of one of the three workmen claiming injury from inhalation of fumes after blasting (see 9 above). The Committee considered the subsequent laboratory reports on this patient, and gave as their opinion that the disability claimed was not due to the inhalation of the fumes, but to a general toxemia probably arising from infected teeth and tonsils.

18. Case of alleged phlebitis of the leg due to bruise; workman employed by a hotel. He had history of previous treatment for phlebitis in this leg. Committee asked to have patient brought before Rating Board with the two physicians who had treated him.

19. Alleged injury to the sacro-iliac region from a fall upon a rock which he claims "dislocated two vertebrae." Subsequent examination showed old hypertrophic arthritis involving entire spine. The Committee expressed as their opinion that this man's condition is not due to injury but to an infectious arthritis.

20. Infection of the arm, following laceration with gravel and thorns; pneumonia developed as a complication, and patient is still under treatment. Committee deferred action until patient is discharged, since he apparently is well on the road to recovery.

Meeting of November 4, 1934

21. Dr. Harbridge introduced the question, propounded to him by an insurance company, as to the ethical and legal procedure, where an injured man has been attended by a physician and the insurance company wishes to have him examined by another physician; whether the attending physician should send his records and x-ray films to the office of the

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CRUM EPLER, M. D.

Superintendent

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consulting physician, or whether such consultant should inspect these at the attending physician's office and in his presence. After considerable discussion, the Committee took no official action but were of the opinion that the issues raised were either covered by law and, therefore, out of their jurisdiction, or by well understood ethical customs which did not require explanation.

22. The Committee cnosidered at some length the issues raised by a resolution from the Gila County Medical Society regarding the activities of certain insurance companies who are writing ordinary accident policies and misleading employers and employees into the belief that this gives them protection against accidental injuries at much less cost than the Industrial Commission insurance. The Commttee voted to bring this to the attention of the Commission. This was done later in the same meeting, when members of the Industrial Commission joined the Committee at luncheon. The Commission stated that this is a matter to which they are giving much attention and study. They had not yet solved it, but were making progress and believed they would find a solution which would give the desired relief.

23. The Committee then took up for final disposition the case of suspected lead poisoning (see items 5 and 13). They had before them the opinion of Dr. Carey P. McCord, of the Industrial Health Conservancy Laboratories of Cincinnati, O., secured through the efforts of Dr. Carlson. On the basis of this report, the Committee gave as their final decision that an untoward accident of an acute nature was sustained, which was probably cyanide poisoning; that it was subsequently discovered that the workman was suffering from chronic lead poisoning.

24. With regard to the case of supposed "Brass Founder's Ague," (item 15) the opinion of Dr. Carey P. McCord was also presented. After considering this, the case was left for further consideration by the Medical Rating Board, without recommendation from the Committee.

25. Case 5629.—loss of right testicle following pelvic injury; testicle found to be tuberculous. The Rating Board did not determine any disability from the loss of the testicle, and the Committee was asked to review the case again. After discussing the case, the Committee gave as their opinion that there was a pre-existing tuberculosis of the testicle which was aggravated by the injury and that this man probably has a ten per cent total permanent disability as the result of the loss of this testicle, and that other symptoms complained of are not due to the injury.

26. Matter of proper compensaton for Dr. McCord for his expert advice on the two cases (items 23 and 24 above). After discussion the Committee gave as their opinion that a fee of $25.00 for each case would be fair.

27. Question of the charge made by an attending physician. Woman suffered an injury and the physician agreed to take care of her for the total sum of $25.00. Later the case turned out to be industrial and the doctor agreed to refund the $25.00 to patient and present bill to the Industrial Commission; he did this but the bill presented was $106.00, for the same services which he was willing to do for a private patient for $25.00. Committee asked for further information, thinking that the doctor might have thought he was doing charity, and when he found the case was industrial, send bill for regular fees.

28. Case of apparent double charge. Workman under treatment for burns from an exploson; while recovering from this he sustained a second injury

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for which he was hospitalized. Bill was received for treatment of this patient in the hospital for one injury and on the same dates for treatment at the doctor's office for the other injury. Committee asked for further information, thinking this doctor may have found it necessary for patient to come to his office for special treatments during period he was in the hospital.

29. Case of alleged injury from bruising abdomen; did not consult a physician for a month and was then found to have intestinal obstruction. Exploratory operation showed mesenteric thrombosis, from which patient died. After reviewing all the evidence and opinions of attending physicians and consultants, the Committee gave as their opinion that the thrombosis was not due to the accident but to pre-existing cardiovascular disease.

30. Case 3582, workman bruised left chest by fall against a sharp corner, followed almost immediately by lung hemorrhage. This hemorrhage had recurred at frequent intervals; artificial pneumothorax had been tried but could not be produced on account of adhesions. The various phases of the case were discussed and suggestions made as to treatment, with request to attending physician to report subsequent course of this case.

31. Case of a ranch workman who delivered a sick cow of a dead fetus, without gloves; cow was diagnosed by veterinary as having a blood stream infection. Without local lesion the workman developed chill and high fever ten days later. Patient is still sick. Committee asked for further data regarding laboratory examinations and suggested tests for undulant fever.

32. A deputy sheriff who was bruised between a car fender and a post; a few days later he developed fever, pain and delirium; attending physician reported a septic kidney from trauma. The Committee did not take formal action, but gave as their informal opinion that the septic kidney would not have been caused by any such trauma as that described in the report.

33. Case of a mine watchman about 90 miles from nearest doctor. Claims disability from infection of foot following bruising. Claims to have sustained the first injury in July, 1931, but did not see a doctor until August, 1932; at this time there was an abscess which was incised and healed. In June, 1933, workman was treated in Los Angeles for injury which he claims to have sustained in February, 1933. Claim has been twice denied by the Commission and comes up for review by the Committee. The Committee referred the matter to the Rating Board for personal examination of the workman and decision.

BOOK REVIEW

A TEXTBOOK OF GYNECOLOGY. By Arthur Hale Curtis, Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of Staff and Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Second edition, reset, 493 pages, with 300 original illustrations, chiefly by Tom Jones. Philadelphia and London, W. B. Saunders Company, 1934, Cloth $6.00 net.

This volume presents a concise and practical treatise on this important subject. The text is based largely on the author's personal experience, starting with "the gynecological patient presents herself," giving his methods of history taking and examination. The chapters are grouped under the more general headings of Infectious Processes, Tumors of the Uterus, Displacements and Relaxations, and Disturbances of Function. The pathology of the various conditions is fully discussed and exceptionally well shown by the large number of illustrations. This work will prove a valuable addition to the library of the gynecologist and the general surgeon. H. P. M.

The great strides taken by the medical profession in the last few years in the prevention of rickets can be traced directly to the newer knowledge and understanding of Vitamin D. Because of the discovery of Vitamin D, rickets—once a familiar child hood menace—is now rapidly becoming a rare disease in civilized countries.

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